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AMSTRAD PCW

ISSUE 27 • DECEMBER 1988 • £1.50

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PLUS

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- *LocoMail wallchart*
- *Prestel*
- *50 programs compared:*

Databases, Education, Comms

Exposed!

The secret life of your PCW: the fun and games start on page 10

cp software

NEW

CLOCK CHESS 89

CLOCK CHESS 89 is the **strongest** and **most versatile** chess program yet for your PCW computer. It has the most advanced 3D graphics, the widest range of options, the power to play incredibly fast and the intelligence to selectively search deep into the position. CLOCK CHESS 89 has been tested against a wide range of other chess programs and has shown itself to be stronger than any of them.

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"CLOCK CHESS is a lively and interesting opponent. An aggressive program that keeps you on your toes .... it dices up Colossus Chess nicely" Mike Basman, UK Chess Champion.

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PUBLISHED BY
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EDITORIAL
AD PRODUCTION

4 QUEEN STREET
BATH • BA1 1EJ
TEL • 0225 446034
FAX • 0225 446019

EDITOR
Rob Ainsley

STAFF WRITER
Sharon Bradley

TECHNICAL EDITOR
Steve Patient

ART DIRECTOR
Dean Wilson

ART EDITOR
Kim Bale

ART ASSISTANT
Sally Meddings

AD PRODUCTION
Diane Tavener
Claire Woodland

ADVERTISING MANAGER
Elaine Brooks

PUBLISHER
Kevin Cox

SUBSCRIPTION ENQUIRIES
SPECIAL OFFERS

THE OLD BARN
SOMERTON
SOMERSET • TA11 7PY
TEL • 0458 74011

SUBSCRIPTION ENQUIRIES
Sarah Richards

SUBSCRIPTIONS
AVON DIRECT MAIL
UNIT 12, OLD MILL RD, PORTISHEAD
BRISTOL BS20 9ES TEL. 0272 842487

COVER PHOTOGRAPHY
STUART BAYNES PHOTOGRAPHY
BATH. TEL • 0225 66343

COLOUR ORIGINATION
WESSEX REPRODUCTIONS
325 WELLS RD, BRISTOL BS4 0QL

PRINTING
REDWOOD WEB OFFSET
YEOMANS WAY
TROWBRIDGE • WILTS

DISTRIBUTION
SEYMOUR PRESS
334 BRIXTON ROAD
LONDON • SW9 7AG

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NOW WITH STOP PRESS, EVERYONE CAN HOLD THE FRONT PAGE NEWS.

STOP PRESS

'STOP PRESS' is the ideal DeskTop Publishing program for home enthusiasts, schools, societies and small businesses. 'STOP PRESS' makes it simple to create professional newsletters, leaflets, forms and flyers, in fact anything where text and graphics are required – placing you right at the heart of the DeskTop Publishing Revolution.

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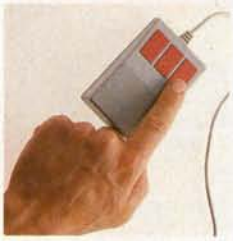

Established as the market leader the AMX Mouse has been the driving force behind a whole host of new applications from other software houses. With its unique design and high resolution movement the AMX Mouse is a must.

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NOT WORTH THE PAPER...

Here's a funny joke. It goes like this. 'Now that we've got a PCW,' says the manager showing round some clients, 'we have a hi-tech paperless office.'

'And what's this room for?' asks one of the clients. 'Ah,' says the manager, 'This is where we keep our continuous paper for drafts, our letterheaded paper for the daisywheel printout, our manuals, our disc boxes, our copies of 8000 Plus, the hard copies of all our database and payroll records,' etc. etc. ad nauseam.

Maybe it isn't that funny after all. The computer industry generates horrifying amounts of waste paper, and we don't exactly help by printing thousands of magazines every month which themselves encourage people to do things like send mailshots to all their club members.

All of which is quite upsetting, because the potential for computers to stop the squandering of the earth's diminishing forests is vast. Why print stuff out when you have it on disc? But old habits die hard, and a society that believes nothing is worth anything unless it's down on paper has, through the computer, increased its consumption of the stuff several times over. Instead of printing one version of the letter and tippexing the mistakes, you do a couple of drafts, then an NLQ or daisywheeled version, then another one because that one came out printed too far to the left, then another as you realise the date's wrong...

So what, the cynics are muttering, whatever I do, it won't make any difference, it's only a gesture, the clearing in the Amazon rainforest is the real culprit, etc. etc.

Rubbish. The only way the current lip service to things Green will get translated into fewer trees being made into pointlessly thick brochures that come mailshot with your Access bills and go straight in the bin, is when market forces have it running that way. Market forces will do that when public opinion is strong enough. And public opinion starts with you and me. Perhaps the best Christmas present we can give ourselves is a bit of awareness.

But that's enough of that. To all our readers, whether in Britain, abroad or just scanning this in WH Smith's, a very happy and peaceful Christmas holiday. Mine's a double mineral water. Cheers!

Rob Kinsley

Count on us

FOUR pages of Tipoffs, we promised you last month. And, OK, there are only three.

Our excuse? One tipoff – printing text in columns of two or three using LocoMail – was so good we ran it as a separate article. Aspiring desktop publishers can find it under 'LocoMail' on page 33. This makes this month's Tipoffs the widest ever, stretching from page 33 to 72.

Questionable?

We've been inundated with replies to the questionnaire that was in issue 25. Most of you seem happy with the magazine at the moment but there were plenty of ideas and suggestions for extra features and items. We'll be going through them in detail shortly, but in the meantime, here are the five lucky winners of the £25 software vouchers we promised:

***Ian Goodhardt**, Berks; **Robin Gammon**, Maidstone; **Hazel Norrie**, Irvine, Ayrshire; **FT Murphy**, Rotherham; **WR Corbett**, Weymouth.*

The vouchers can be used against any software or hardware from our Special Offers pages.

Nobody's perfect

Given that there are about 40,000 words in each issue of 8000 Plus, getting 39,995 of them right is not a bad striking rate (99.99%). However, by that well-known mathematical principle The Law of Averages, some mistakes are bound to occur.

First, LocoFile, the database add-on to LocoScript reviewed glowingly last month, is £29.95 not £24.95 as we said. See PostScript.

Second, the company who have lots of copies of HItch Hiker's Guide to the Galaxy and Leather Goddesses of Phobos are not ComSoft as we said but Copy Comm Software of Cupar, Fife; their number is 033 77 444.

In the Tipoffs, we managed to cut out the last couple of lines of the screen shots showing the vital routines to update your LocoMail data files; well, we know you like a challenge.

8000 PLUS

The January issue of 8000 Plus will make acquaintance with your newsagent on December 22nd. Be resolute – order your New Year copy now!

NEXT MONTH

***Adding a $5\frac{1}{4}$ or $3\frac{1}{2}$ inch drive to your PCW – access to a new world**
***Portables roundup – your PCW and a PPC, or a Tandy, or Psion Organiser, or Z88... which would be best for you?**
***Digita's new package for the PCW: is it really a 'revolution'?**
***New games and programming packages reviewed**
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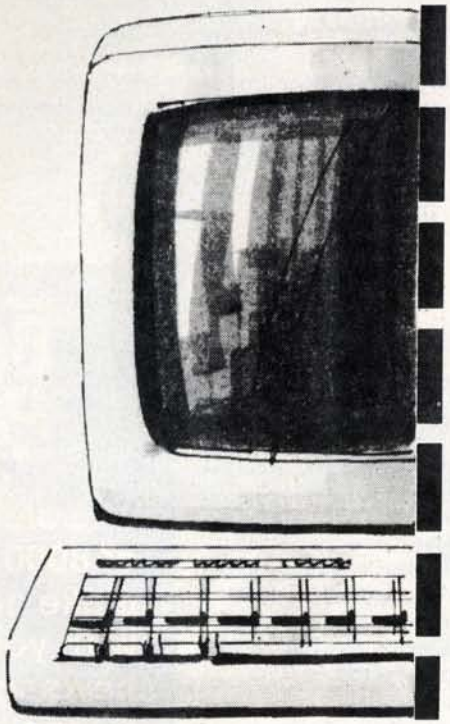

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A Message from Amstrad's Chairman . . . . .

Dear Amstrad Computer User,

You don't need me to remind you that you have selected the best computer in it's price range. Numerous journalists from the specialist press have now contributed to the opinion that Amstrad computers represent the best all-round machine you can buy.

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You can be a part of Amstrad's ongoing effort to inform and help users by taking advantage of this opportunity to join the User Club. Catering only for the Amstrad computer user, this specialist support club was initially formed by Amstrad solely for the purpose of assisting you with all your computer needs.

There are many immediate and direct benefits available, so don't delay before filling out the application form below and sending it back to Amsoft.

Yours sincerely,

Alan Sugar

Alan Sugar
Chairman AMSTRAD Plc

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NEWS

Seconds on

The latest version of Clock Chess from CP Software is now available. Appropriately called Clock Chess 89 in anticipation of the New Year, the package will cost £19.95. The company claim their program can outperform any other 8 bit chess program in the world. Featuring 3D graphics, user extendable library of opening moves and a host of other features, the program follows Clock

Chess 88 which impressed chess critics with its very powerful play and large opening book.

For the more serious minded PCW user there is a Z80 to 68000 code converter announced for release on Nov 14 at £99.95. Details from CP on 0993 823463.■

Amstrad ear

Amstrad Group Service Controller, Simon Angel, has decided to install a 24 hour per day Bulletin Board to his department for 24 hour a day advice and information. 'Even with 25 staff and 20 lines for his department alone some customers do not always get through first time,' he said.

The new board is imaginatively called Customer Services and is on (0277) 231276. The board will operate at V21, V22, V22 bis and V23 Baud rates running on Opus 1.03B. The system has been installed by Amstrad engineers and will provide interactive support as well as carrying Public Domain software.

The number for further information is 01-836 6801, but they are reluctant to give any information, further or not.■

Shady characters?

Microlink report a tremendous surge of interest in their interactive online adventure. Shades is a computer adventure game played against real people pretending to be imaginary characters and computer generated mobiles who are often pretending to be real people.

The Microlink personal directory (used to avoid remembering other peoples mailbox numbers) has been improved to allow checking for duplicates and deletion of entries.

Microlink are offering £10 off your monthly bill for each new member introduced. Send their name and address by keying >RECRUIT.

In the wake of complaints concerning Mailfax, introduced by Telecom Gold allowing computer users to send messages to fax machines, Microlink have introduced their own system.

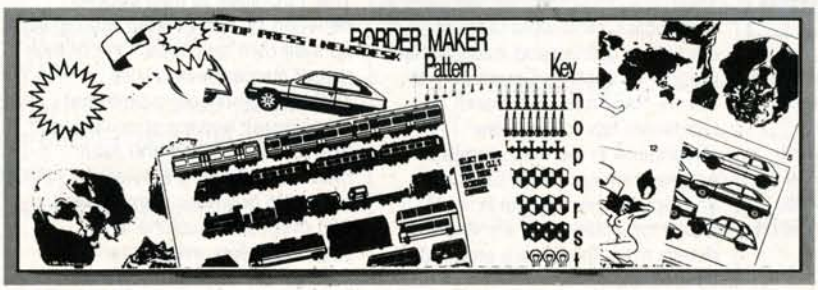
Problems stemmed from the inability of Telecom Gold users to cope with the increasingly long string of numbers required for the fax service with the result that more than thirty percent of all messages sent in the first few days were sent to invalid numbers. This had the result you would expect and dramatically increased the level of complaints to BT.

Microlink have rewritten the front end so that only the fax number itself has to be typed in.

They've also taken the opportunity to introduce Fax-Check (FAXCK), a simplified method of finding out if messages queued for transmission have been sent of not.■

But is it art?

HD Computer Aided Graphic Design have released a disc with two hundred and eighty individual clip art designs suitable for inclusion in both Stop Press and Newsdesk International.



Called Desktop Magic the designs include a range of cat and dog designs by June Windsor. Also included is a range of ninety designs for constructing trims and borders. Details and prices on 04867 81394.■

Amstrad in 'sub-standard' 8512s row

When Wrexham minister Rev. Keith Walker made the extremely sensible decision to buy a PCW he expected to have few problems. After all, the PCWs all come as standard systems, don't they?

Despite the rumours that come and go concerning the demise of the PCW8512 they are, of course, still on sale. The Reverend Walker bought his new 8512 machine mail order and despite a little hiccough (the first one didn't work but was immediately replaced) he remains delighted with his aquisition. Almost.

'My intention was to start some desktop publishing – I'd already bought Stop Press with the AMX mouse. But when I came to plug the mouse in the back, I found the expansion port was totally different to the one that should have been there', he said.

He also wanted to attach a modem to his PCW but of course the Amstrad CPS 8256 interface would not fit his Amstrad PCW 8512 either!

Where there should have been an edge connector there was now a fifty way centronics type D connector in a tasteful shade of blue. He contacted his suppliers, West of England Business Services who contacted their suppliers, Hugh Symons Associates.

The word came back to him that his PCW had originated in West Germany, where, in order to comply with local electrical regulations, it had to have a proper connector fitted (it also had a standard 36 way Centronics connector for the PCW printer).

Further enquiries of AMX elicited the information that an adaptor would soon be available to connect the UK peripherals to the West German connector; but, said Amstrad, it would have to be paid for. 'I'm not happy about this at all,' said the Rev. Walker. 'If Amstrad change the specification, I don't see why I should have to pay to bring it up to standard.'

We spoke to Amstrad who asked for time to consider the questions we'd raised. They rang back two days later with a characteristically helpful and definite 'No comment'. However, according to one supplier who refused to be named, 'Amstrad have stopped manufacturing the 8512 but demand is such that they had to ship over a lot of German 8512s to cope. Maybe they think people won't notice.'

Hugh Symons Associates confirmed that a lot of Amstrad machinery now comes from West Germany and Amstrad told them that a 'dongle' will be available 'soon' to resolve the problem. But right now that's no use to Keith Walker.■

Twenty four ours

Locomotive's long-awaited 24-pin printer drivers, enabling LocoScript 2 to print out on 24-pin printers all those different print styles, are now available. They can cope with all the LocoScript 2 character set – Russian, Greek, Mathematical symbols, and all the extra fonts LocoFont provides.

Locomotive's Howard Fisher said 'we now cover just about every 24-pin printer on the market.' He said they were looking into the possibility of marketing a printer themselves along with the drivers, though this might bump the price of £24.95 up a bit. Details from Locomotive on 0306 740606.■

Emgineering dept

SM Engineering, who produce a range of interface and signal conditioning products for the PCW, have continued to expand and have decided to celebrate by releasing a Z80 based controller board. The boards are particularly useful for one-off purposes such as assembly line checking and automatic data logging.

SM Engineering also produce stepper motor controllers for the PCW and will undertake prototyping of boards. Details from 0323 766262.■

DTP goes to the dentist

The Desktop Publishing show was held in October. The chairman of the judging panel Michael Barnard claimed that DTP is 'rapidly transforming the world of communications in print – but is not without its own particular teething problems.' He didn't elucidate on the nature of the dental complaint.

One of the highlights of the

show was the award ceremony and as in all the best industry specific shows almost everyone who submitted an entry got an award. They will not be listed here. The pertinent observation was made, however, that new technology is no substitute for good design and training.■

You can take it with you

If you own a Z88 and like joining things then the Z88 Users Club is for you. The club aims to offer a range of services to its members including a newsletter.

The newsletter will be called Z88 Eprom (all the clever names having been taken by Future Publishing) and the sample cover we've seen suggests there are about 36 pages to be published six times a year. There will be an Eprom erasure service at 50p plus return postage, liason with Cambridge Computers, club discounts and a software library. Details from 68 Wellington Street, Long Eaton, Nottingham NG10 4NG.■

Spray it again Sam

Everybody wants to be in the news pages of Britain's best selling PCW magazine so it came as no surprise to find a press release from Publicis-PR extolling the virtues of WD-40 for the enviro-mentally conscious computer user.

WD-40 sprayed onto connectors and board edges will prevent the formation of resistive oxides that can lead to loss of low current signals. The board edges should first be cleaned with a shaped edge rubber eraser. Sticking keys can be freed up with a quick application of the wonder fluid as can any other moving parts (the cursor perhaps).

When you've done the computer you can do your revolving chair. WD-40 contains no flourocarbons, no silicones and it also smells very technical.■

Christmas parse

Topologika, producers of a range of adventure games and educational programs, such as Countdown to Doom, Return to Doom and Giantkiller have three new adventures in the final stages of programmming. Avon, Quondam and Spycatcher are the ones to watch for. Release is 'imminent' – details from Topologika on 0733 244682.■

It all adds up

Cornix Software have released an improved version of their accounting package for the PCW range of machines. Claimed to be as simple use as the original version released in 1985 the package offers immediate update on up to 12 accounts.

It also offers reports on any of the fund accounts and further search routines for in depth analysis and job costing. VAT is

handled at either the tax point or the cash point and in both cases the program provides all the information for standard VAT returns. Simple Accounts II costs £99.95 from Cornix Software on (0462) 682989.■

Jobs for the boys

For those who think civilisation stops at Chelsea Bridge the South London Business Initiative have news. Backed by Mercury Asset Management (MAM) the SLBI have set up a Youth Enterprise Centre. The YEC seek to help people between 16 and 24 who wish to set up their own business. One of their recent successess is VSE Technical Services, a personal micro repair service specialising in Spectrum, Amstrad and Atari machines. Already they are attracting business from Europe and even one machine from Australia. More information from YEC on 01 733 5570.■

Contrasting words

Compumart are offering a range of mesh screen filters specifically manufactured to suit each of the Amstrad machines. Headaches resulting from difficulty in actually reading the screen are all too common (as are those resulting from reading the words on the screen.) Increasing screen contrast is achieved by preventing ambient light from reaching the screen and nylon mesh filters are particularly good at this.

Compumart hope to sell their screens for between £12 and £17 inclusive of VAT and each will be fitted with a colour co-ordinated plastic frame and continuous velcro strips for attachment. Their number is 0509 610444.■

LocoScript leaves home

Graphic Point are offering to take your discs full of LocoScript files and convert them into a form suitable for the PC or Mac. This service, claims the bureau, will enable the original word processing material to be used for the most sophisticated DTP procedures without the delays and costs involved in rekeying the checking all the data. The service is not cheap, however.

'We can convert a full 180K or 720K Amstrad disc to a PC for £15.30 or £61.20 a time plus VAT,' said Chris Buckham, who runs Graphic Point. Putting all the information on to a Mac disc is only an additional £4.50 for the 180K or £18 for the 720K of information. 'Amstrad users need no longer feel locked into the straightjacket of their Locoscript software,' he stressed.

Since charges are based on file size smaller files will cost less down to a minimum of about £5. For your money you get a PC or MAC disc with your files on it in ASCII format. Graphic Point's number is 021 233 2905.■

Something for nothing

Until the end of December 1988 computer users buying any of Accodata's new products from their Autumn collection of computer accessories launched in September will get 'something for nothing'.

This intriguing offer is available on the user's first new products order through all accredited Accodata product dealers and office stationers throughout the UK. Further infor from 0732 885555.■

The day Daniel's dad brought his office printer home.

My dad's firm is always busy so he has lots of LC-10 printers at his office.

In fact, he sometimes has so much work to do that he keeps a personal computer in his study so he can bring work home.

But when he's really busy, he brings home one of those Star printers too.

Of course, I know exactly how to use them because we have the colour version at school.

It can print documents in six different colours.

So I'm not surprised WHAT MICRO? called the LC-10 the 'Best Budget Dot Matrix Printer' on the market.

What's more it's a lot less expensive than other printers but much better quality.

(My friend, Philip, even has one for his Commodore.)

For a start the front control panel is child's play.

The six different fonts give you so many different style options when you print things.

It's pretty fast too with a draft elite speed of 144 cps and high density near letter quality at 36 cps.

There's also the LC-10's special feature called 'push-tractor' which gives the lowest tear-off position of the paper.

And you can park continuous paper and automatically load single sheets – and I think that's unique for this sort of printer.

You know, if I keep my paper round going for a few more weeks I'll soon have enough to buy my own LC-10.

And then for a small fee, dad can borrow mine.

THE Star COMPUTER PRINTERS

Star Micronics U.K. Ltd.
Craven House, 40 Uxbridge Road,
Ealing, London W5 2BS.
Telephone: 01-840 1800.

A division of
Star Micronics Co., Ltd., Japan.

Please send me details of the Star LC-10 business printers.

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Company _____

Address _____

_____

Postcode _____ Telephone _____

Or just call Belinda on 01-840 1829.

L10A8+12

Public Sector Customers may purchase at preferential terms from HMSO. Contact (0603) 695256

OFF THE LEASH

Fun and games! Your PCW as a leisure machine

So we know you can use a PCW for word processing, that's what we all bought it for. And we know you can run databases and spreadsheets and handle your club accounts and run your company payroll and do a million other *useful* and *sensible* things.

But what about the leisure side of the machine? Look at any magazine for other home computers and you'll see pages on games reviews, graphics articles, MIDI tutorials and other *interesting* things. Now the PCW can't really compete with an Amiga as a graphics workstation, nor with the Atari ST as a music computer. It hasn't got the range of cheapo games available that the Amstrad CPC has, nor the leisure utilities of the PC. Yet there's still plenty of inexpensive not-so-serious software that will brighten up a lot of long winter evenings.

Staring at a PCW screen waiting for inspiration is a bit like winter: not enough green and too much black. But you can brighten up those word processing screens and winter evenings in a variety of ways. Games, music, graphics, even programming... your PCW isn't just a writing workhorse, it can be a leisure tool as well.

You can tell Christmas is approaching because the shops are full of people complaining about commercialisation. PCW owners show peace and goodwill to all persons the whole twelve months of the year; but when it comes to buying a present for a friend who owns an Amstrad PCW, or for yourself, leisure software (or hardware) is ideal.

So here's the 8000 Plus roundup of what your PCW can do to entertain you. There's a directory of all the stuff mentioned at the end.

Games for a laugh

When the PCW was launched as a word processor three years ago everyone confidently assumed that no games would be written for it at all. Certainly the 'Mutant Frogs from Tharg' type would never be converted from their CPC or Spectrum format – not the sort of thing that would appeal to most PCW owners. But the idea of using a computer as entertainment has only recently been shaking off its trivial, shoot-the-aliens image. Software houses soon caught on to the fact that PCW was perfectly capable of playing 'intellectual' games like Chess or Bridge – things which would certainly appeal to the average PCW owner. Soon adventures, flight simulators, sport programs and even the odd arcade game began to appear. Now there are over a hundred games for the PCW, not bad for a machine that was never supposed to run anything but LocoScript!

Anyone who enjoys traditional board games like Scrabble, Chess or Backgammon can play excellent versions of them on their PCW, which can prove a very difficult opponent. The PCW conversions perform the impossible of outperforming the 'proper' games computers with their colour monitors and blitter chips.

Which Chess program is the 'best' to play against is a constant bone of contention (among the producers, at least!) General opinion seems to be that Clock Chess '88 plays the strongest game, though any of the chess programs play a good club standard. All offer a variety of features like saving games to pick them up later on, printing out of the moves after, blindfold chess, Kriegspiel etc.

Colossus Bridge is a flexible program with Blackwood, Stayman and Baron conventions that will test a good player. It can also give advice. Bridge Player 2000 has tutorials and is probably better for the beginner.

You'll also find that the PCW is hard to beat at Scrabble, which on the top level turns out scores of 250-400 regularly. Its liking for very tight play means it tends to put down obscure short words like 'ka' and 'gju' and 'dzo' – if you have a Chambers dictionary you can find out what they mean though it's doubtful you could ever find a sensible situation to use them in.

Be adventurous

Those who like puzzles and 'thinking' games rather than shoot-'em-ups may well enjoy text adventures. In these you are a character in a scenario (for example, Arthur Dent in the Hitch Hiker's Guide to the Galaxy) often set in a dungeons-and-dragons atmosphere of Dark Ages magic and fantasy. You type in your movements and actions and the computer then tells you what happens to you as a result. The program understands simple pidgin English like `take the skull then give skull to Hamlet` or `ask Hamlet about life` but anything too complex is beyond the limits of comprehension of the 'parser'. Something like `ask Hamlet whether 'tis nobler in the mind to suffer the slings and arrows of outrageous fortune or to take arms against a sea of troubles and, by opposing, end them` would just elicit an 'I don't understand all this' response from the machine. Which

Simulation note

If playing Tomahawk gets you going, wander into your local arcade. Many games have simulator cabinets which not only display your view from the cockpit on a colour video screen, but as you fly through the combat territories, your seat moves under hydraulic rams to simulate the effects of climbing, diving, banking and even crashing! Afterburner, Powerdrift and Galaxy Force II are ones to look for.

Hardware

Great stocking fillers. 9512 owners suffer most from the need to replace ribbons so it's worth considering as a filler for them; not very exciting but always useful. It's a well documented fact that no PCW user ever has enough discs and these are always welcome. In the same vein a box of continuous paper makes a nice chunky present that will last all year. You could also consider disc boxes, printer stands, paper guides to allow accurate paper feeding or a screen filter.

probably would be Hamlet's answer anyway.

Your usual options are to move in the directions of the compass which you do by typing n, sw, e and so on. You quickly get lost if you don't keep a map of your progress on a sheet of paper.

These games can have very frustrating situations to puzzle your way out of, but hint sheets are often supplied or available from the manufacturers. The fact that there's only one, correct, path you can tread through the adventure means once you've done it (which may take months) it's no longer any use. There aren't really any 'open-ended' PCW adventures where different things happen to you every time you play (ah, for a PCW version of the old classic 'Elite'...). Text adventures work well on the PCW, and quite a few games (Jinxter, the Pawn, Guild of Thieves, Mindfighter etc.) have a number of still illustrations on screen to go with the text. They aren't works of art but certainly make a game much more interesting to play.

The pick of the adventures tends to come from either Infocom (who have stopped distributing their titles – you'll have to get them from mail order places) Rainbird or Mandarin. The Hitch Hiker's Guide to the Galaxy is probably the best-selling adventure game for the PCW. Co-written by Douglas Adams (author of the radio play, the stage play, the TV series, the book, the book of the radio scripts etc. etc.) it has the same humour of the original and contains a lot of fiendishly difficult problems to overcome – you'll have fun trying to get the Babel fish. Perhaps just a bit old hat now, but still a very good game.

Fancy of flight

You can get flight simulators for the PCW (Strike Force Harrier and Tomahawk, for example) which show the controls and instrument panel of a plane or helicopter together with a 'view' from the cockpit as you fly around shooting things down. They're not easy to control at first and make you appreciate how difficult the real thing is! Tomahawk is now available for the 9512 and works with a joystick which makes moving rather easier than hitting keys like Q and W.

There are also 'traditional' shoot-'em-ups (shoots-'em-up? shoot-'ems-up?) and arcade games, more like the video games down your local amusement hall. The PCW screen, being designed to display text, limits what you can do enormously (none of your blitter chip nonsense here!) but it's amazing what skilful programming can do. Matchday II , the soccer game, gets surprisingly good graphics on the PCW screen and other visually stimulating games include Batman and Head over Heels. Sports fans can get soccer, cricket, golf, American football and even snooker.

An oddity is 'Tetris', a sort of animated fit-together-the-shapes test like those in the TV programme The *Krypton Factor*. It's computer gaming at its simplest, being a straightforward geometrical and rather abstract idea which is incredibly addictive. It was devised by a Russian computer programmer and is perhaps the first game to come from the East bloc to the West. (Versions on other machines have been evidently been converted by someone with a cynical sense of humour. As you progress through the levels of difficulty the background scenes change gradually from happy peasants in fields, through Red Square being buzzed by a light plane, to jet fighter battles with MiGs). The only annoying thing with it is that it beeps every time a brick lands, which quickly makes you unpopular. For a sneaky way to turn it off, see last month's Tipoffs.

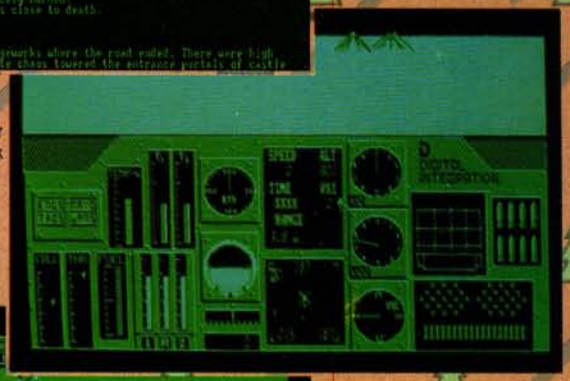
Problems can occur if you're buying for a 9512 as some games don't work. Check with the dealer before buying which models the games work on: it's unlikely they will know, so you can try the makers, though it's probable they won't know either!

If you don't think much of existing adventure

Nail-biting action from Hitch Hiker's Guide to the Galaxy

An illustrated game – Lancelot

Helicopter simulator Tomahawk



Matchday II

A blitter what you fancy

The blitter is the part of a machine responsible for moving shapes around on screen, providing smooth animation in arcade games (the PCW doesn't have one). The term is loved by games magazines for its capacity for puns and sections entitled 'The Blitter End'.

Tetris

Scrabble

Tool kit

A mouse is a small hand-sized box on a trackerball you run along your desk top. It connects to the PCW by a cable and as you move the mouse on the desk, the cursor moves on screen similarly. Makes freehand drawing easier. A light pen connects to the PCW by a cable and enables you to draw lines on the screen by – well, by drawing on the screen with the pen.

The book of the program

A book is a good stocking filler. Any largish bookshop will have the odd LocoScript or BASIC tutorial book, and if they don't have a large technical section, they'll carry lists currently in publication for you to order.

For a really useful and fun present, how about a year's subscription to 8000 Plus?

Clock Chess '88

EMR's music studio editing screen

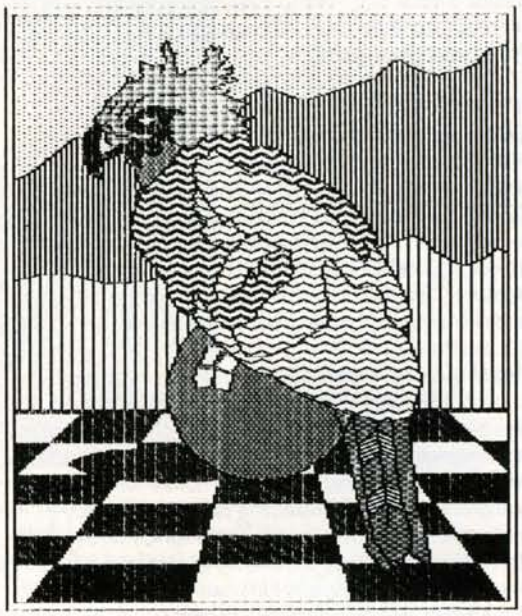
Electric Studio's Art package, on screen and printed out

games you can always write your own. 'Professional Adventure Writer' allows you to write your own games; you define a series of locations, objects and characters in the game, then tell it what response to give when the player does certain things with those objects in certain locations. Effectively you fill in the blanks of a standard game system with your own ideas. The end result will look like a professionally produced adventure with the same degree of sophistication in understanding the player's directions. You could try marketing it, though a good game takes the same amount of planning and hard work to write as a novel!

Graphics

Your PCW doesn't have to restrict itself to text handling. While artistic drawing is really beyond the capability of the printer, anything which would be described as a 'diagram' or 'map' can be prepared effectively on a PCW screen. Freehand lines can be added and are best done with a mouse or light pen. You can also add labelling text in various sizes and directions and fill areas with several patterns of cross-hatching, shading and dots. For simple technical drawing and mapping it can be a valuable tool, and is great fun too. Of course, 9512 owners need a dot matrix printer to be able to print anything out.

The advantages of doing graphics on disc quickly



An African Green laying the world's largest egg. It used to be called 'Happy'.

For the PCW owner with everything?

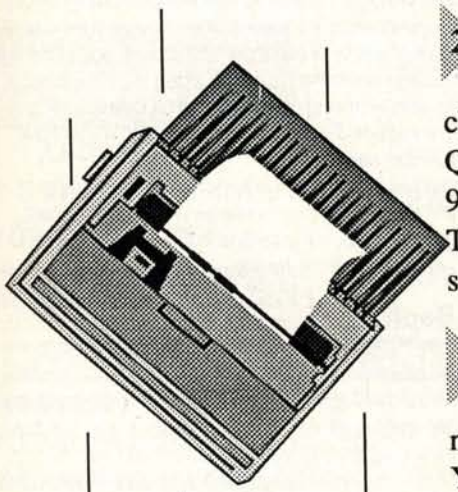
Forget your Rolex watches, Porsches and real Filofaxes. The latest in status symbols is the designer PCW, hand painted to your specifications. Instead of a dull grey you can have your computer painted to match your Docklands flat wallpaper, your favourite soccer team's colours or your nail varnish...

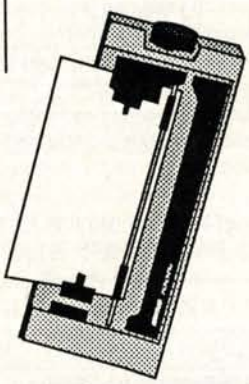
This is a highly exclusive service and will cost you. You can expect to pay about £150 per machine, and it takes a week or so (each coat needs at least twenty-four hours to dry properly). Of course you or the painter will have to take the casing off the rest of the machine before it goes near any paint!

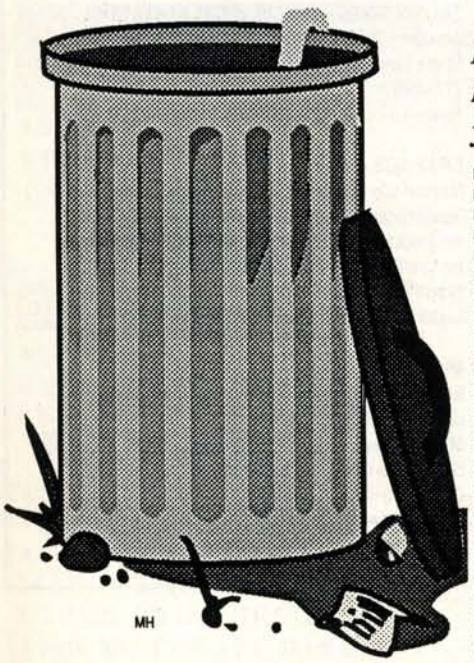
There are no places doing this commercially, it's all down to you to find a designer or artist willing to do it. If you plan to have your keys painted in a dark colour it helps if you can touch-type!

UNHAPPY WITH YOUR PCW's PRINTER?

At last a high quality printer that's as flexible as LocoScript 2. With a 24 Pin Printer and the 24 Pin Printer Drivers Disc from Locomotive Software, you get really high quality printing of ALL LocoScript's characters, pitches etc – even on a PCW9512.







24 PIN PRINTERS ARE GOOD FOR 8000 OWNERS

With a PCW8256 or 8512 you can already print all of LocoScript's characters on the built-in matrix printer. With a 24 Pin Printer "High Quality" printing really will be High Quality! The built-in matrix has just 9 pins – a 24 pin printer not only has more pins, but they are closer together. This means that you get a better result. Most of these printers print in one sweep across the paper – which makes a 24 Pin Printer much faster as well.

24 PIN PRINTERS ARE GOOD FOR 9512 OWNERS TOO

The PCW9512's built-in printer gives good quality results but it is noisy and slow – and it can only produce a small range of characters. You cannot even mix upright and italic characters in the same document. A 24 Pin Printer and the 24 Pin Printer Drivers disc will give you the full range of characters (symbols, accents, Greek, even Cyrillic!), without sacrificing quality.

If you're thinking of getting a better printer, then how about a NEC P6 Plus. We think this is the best price/performance printer around and it's available from us at £549 + VAT. We'll also throw in a connecting cable and printer software FREE! Let us know if you've got an 8000 or a 9512 so we can send the right cable – and remember you'll need a CPS8256 Printer Interface if you have an 8256 or 8512. If your budget is tighter, then how about the NEC P2200 at £349 + VAT – not quite as fast or rugged as the P6, but still exceptional value.

If you've already got a 24 pin printer (such as an Amstrad LQ3500/ LQ5000, Epson LQ series, NEC P2200, P6 Plus or P7 Plus, or a Star NB24...) just add the 24 Pin Printer Drivers disc. For only £24.95 inc VAT you'll get more from your printer than ever before!

Please send me the following products

FOR THE 8256/8512

24 Pin Printer Drivers Disc*	£24.95 ☐
NEC P6 Plus & Printer Drivers Disc*	£631.35 ☐
NEC P2200 & Printer Drivers Disc*	£401.35 ☐
CPS 8256 Printer Interface	£49.95 ☐

FOR THE 9512

24 Pin Printer Drivers Disc	£24.95 ☐
NEC P6 Plus & Printer Drivers Disc	£631.35 ☐
NEC P2200 & Printer Drivers Disc	£401.35 ☐

(* requires LocoScript 2)

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Allen Court,
Dorking, Surrey,
TEL 0306 740606 RH4 1YL

Note: all prices include VAT and UK postage
Prices correct at time of going to press

Cheap note

An inexpensive alternative musical add-on is the DKtronics sound interface, a box plugging into the back of the PCW enabling it to play three musical lines, though the manual is utter gobbledegook (programs to allow normal people to use it are available). Distributors RAM have deleted it from their catalogue but may have a few left for £39.95 each on 0252 850085.

become obvious. You can lay out straight lines, circles, rectangles etc. much more accurately and easily than by hand; you can store your maps on disc so that many different versions of the same map can be easily prepared by copying and amending.

Stop Press is a very powerful graphics program with a variety of powerful text handling features too; it can come packaged with a mouse and is a real pleasure to use. The Electric Studio's Art package gives a good range of features and can come with a light pen. MasterPaint is another good drawing package and very good value.

Many versions of BASIC include special commands to draw lines, dots and other graphic effects; not so Mallard BASIC, the version on your PCW. However Lightning BASIC supplies these functions and a few other goodies like procedures to redraw screen characters to your own design, save screens to disc and so on. Great for BASIC dabblers.

For the real enthusiast a scanner or video digitiser to produce pictures for use in the programs is a must. MasterScan fits on the head of an 8512 or 8256 printer and scans anything you put in – text, maps, drawings or photographs. It converts the scanned object into a series of dots for use in any graphics program and stores it on disc. You can therefore scan anything you like and put it directly into one of your posters or newsletters, though the limits of resolution mean text or objects smaller than 8 point (the size of this text) come out rather fuzzy. A video digitiser does a similar thing with pictures 'grabbed' from a video tape. You can therefore include TV pictures or your own if you have access to a video camera.

The complete kit can be a bit on the dear side but nothing more than a drawing package is needed to start, and unlike most computer activities creating pictures or pages can appeal to all the family.

P.C.W. Bach

Music and the PCW don't go together; if you're serious about 'music processing' you'll have an Atari ST or suchlike. However, if you have a MIDI instrument – ie. one which can play through, and be played by, a computer – you can buy special software which lets you use your PCW like a recording studio, recording and editing (to some extent) lines of music independently just like different lines of text in a document. The result can be played back by the PCW through your MIDI instrument – a synthesiser, a guitar or even a saxophone! Individual lines can then be edited or re-recorded without affecting other simultaneous lines.

Two MIDI interfaces and software packages exist for the PCW, the DHCP sequencer and the rather more sophisticated Electro Music Research Pro-Performer – an essential for any synthesiser or MIDI musician who has a PCW. Both are performing and recording utilities and don't print or display anything in musical notation. Great fun and very useful to any music student – remember your synth or other instrument must be MIDI compatible though. ■

Watching programs

If some of your acquaintances are of the hardened hacker variety you'll be in no doubt about what they want for Christmas, they'll have been dropping subtle hints like, 'Don't forget, it's Maxam II from Arnor: shall I write it down?'.

The PCW is an ideal machine for writing and running programs on. Leisure? Well, you may be surprised how addictive a leisure activity it can be. You could write games, or educational programs for your children, or even something serious like running your business. Writing programs gives you an insight into the way your mind and the world works and is immense fun (unless you do it professionally, in which case you spend your life writing tedious accounts handling routines).

The Locomotive BASIC manual is a good introduction to writing programs with the BASIC all PCW owners have free. You don't have to be clever or have any special training to start programming – just have a desire to experiment. Those who've dabbled already might want to try a new, faster, language. Pascal is probably the best route to take. It tends to be the next step up after BASIC in educational circles. Certainly those familiar with BASIC will feel comfortable with Pascal – just as if you know any Latin (slow and methodical) you'll be able to understand a lot of Italian (which is much faster). For sheer interest and flexibility C is probably the best compiled language around though Pascal is easier.

The HiSoft implementations of any language are good for beginners, and those with some experience too. They come with good manuals, a program editor, they're fast and the prices are very reasonable.

A new language is a Christmas present that can last a lifetime (and that's just understanding the manual). But do get a manual on how to write the language at the same time: introductions to any language (not specifically for the PCW or any other machine) will be available from large bookshops.

Christmas list

All the details you need to drop really effective hints: what you want, how much it is, the name of the company, and their contact number. This is based purely on the prejudices of the 8000 team and we don't claim it's a list of 'the best' – just the things *we* would most like to get for Christmas!

THINKING GAMES
Colossus Chess (£15.95/CDS/0302 21134)
Clock Chess '88 (£15.95/CP/0993 823643)
Cyrus II Chess (£15.95/Amsoft/0277 230222)
Bridge Player (£19.95/CP/0993 823643)
Colossus Bridge (£15.95/CDS/0302 21134)
Backgammon (£15.95/CP/0993 823643)
Scrabble (£19.95/Virgin/01 727 8070)
Tetris (8000s only) (£19.99/Mirrorsoft/01 377 4837)

SPORTS
Matchday II (Soccer) (£14.95/Ocean/061 832 6633)
Brian Clough's Football Fortunes (£17.95/CDS/0302 21134)
Graham Gooch's Test Cricket (8000s only) (£19.95/Audiogenic/01 861 1166)
Head Coach (American football) (£15.95/Coda/01-789 9551)
Steve Davis Snooker (£14.95/CDS/0302 21134)
Leaderboard (Golf) (£19.99/withdrawn, try mail order)

ADVENTURES
Hitch Hiker's Guide to the Galaxy (£24.95/CopyComm/0337 7444)
Leather Goddesses of Phobos (£24.95/CopyComm/0337 7444)
The Pawn (£24.95/Rainbird/01-240 8838)
Time and Magik (£14.95/Mandarin/0625 879920)
Jinxter (£24.95/Rainbird/01-631 5373)
Guild of Thieves (£24.95/Rainbird/01-240 8838)
Professional Adventure Writer (£24.95/Gilsoft/0446 732765)

ARCADE GAMES
Batman (8000s only) (£14.95/Ocean/061-832 6633)
Head Over Heels (8000s only) (£14.95/Ocean/061-832 6633)
Starglider (£24.95/Rainbird/01-240 8838)
Tau Ceti (8000s only) (£19.95/CRL/01-533 2918)
Academy (8000s only) (£19.95/CRL/01-533 2918)
Strike Force Harrier (8000s only) (£19.95/Mirrorsoft/01-377 4645)
Tomahawk (£19.95/Digital Integration/0276 684959)

GRAPHICS
MasterPaint (£19.95/Database/0625 878888)
MasterScan (£69.95/Database/0625 878888)
Art Package (£79.95 with light pen/£129.95 with mouse/Electric Studio/0462 675666)
Stop Press (£49.99/AMS/0925 413501)
Lightning BASIC (£19.95/CP/0993 823496)

MUSIC
Electro Music Research Pro-Performer (£59.95/EMR/0702 335747)
MIDI Interface (£89.90/EMR/0702 33574)
Sequencer (£45 8 track/£60 12 track/DHCP/0440 61207)
MIDI Interface (£79.90/DHCP/0440 61207)

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Also supplied is a comprehensive font and icon editor which allows you to modify the design of a character set or icon on a 16 by 16 grid, one square of which is the equivalent of an on-screen pixel. There are two different design menus depending on whether you want to create a heading or a label. Much of the hard work has already been done for you: when it comes to designing a label, you can select the size you're interested in (there's a choice of widths and heights) and a square will appear on screen in which you can start designing. You then select the font, the size of the characters and the style in which you want them to appear. The pen (or text-generating) cursor is a box the size of the character and can be moved anywhere in the label area using the ordinary cursor control keys.

The graphics options (available under [A]rt) are simple and adequate. Using the famous elastic box ('fix' the top left- and bottom right-hand corner having first stretched or shrunk it to the required size) you can construct lines, circles and arcs and fill and shade. The art cursor is a very fine hairline cross which is great for accurate positioning. Unfortunately, [F]ill will only shade the area that can be 'seen' from the cursor position, which involves a lot of cursor-shunting and repeated [F] key presses.

The same is true of the Print menu. Once you've created the label or heading, you answer a series of questions about how many copies you want, the quality of the printout, what sort of paper you're using, and so on.

It's a pity that the documentation is not more lucid however because there are times when it's not all that commonsensical. Being told repeatedly to press the [ENTER] key when you should in fact be pressing [RETURN] is not all that helpful. Some things should be mentioned which aren't: for example, if you want to have a box around your final label printout, then you have to construct it with heavy line thickness at the design level. Otherwise the screen box is only a cosmetic guideline and will disappear as soon as you select the [P]rint option. This said Letta-Head is a fun and versatile program to have around. ■

RANGE OF FEATURES	**4/5**	**EASE OF USE**	**3/5**
PERFORMANCE	**5/5**	**DOCUMENTATION**	**2/5**

***8000 PLUS* VALUE VERDICT 4/5**

LOGO PRIMITIVES: A USER'S GUIDE

£12.00 ● CP Edwards ● 0225 742098

Logo is not a programming language with which personal computer users are generally all that familiar. In manuals where BASIC rules supreme, Logo is usually dismissed with very few pages of explanation. Yet there are those who see this language, originally developed in the late sixties as a program best suited to the thought processes of children, as having an enormous amount of potential.

Edwards is attempting to redress the balance. In his Logo user guide, he explores all of Logo's most characteristic features (the turtle graphics facility to name but one) and routines.

It's called an electronic book because it's supplied on a LocoScript disc ('for ease of production and access') in four versions: on two sides of an A: drive disc for the 8256 and one side of a B: drive disc for the 8512. Both versions come in either LocoScript 1 or 2.

Edwards makes the point quite early on that the guide has not been written for absolute beginners, only for those with a modicum of experience already. Throughout its 19 chapters he tries to answer any queries and allay any doubts that the Logo user might have when using any of the language's three states of Command, Procedure or Edit.

Chapter 5 explains all about list processing, the function for which Logo is famous whilst others analyse in detail many of the most commonly used primitives (the basic building blocks of the language). In Chapter 19, appropriately entitled Odds and Sods, Edwards takes a look at some that, despite all his efforts, remain shrouded in mystery.

The six appendices included at the end of the book provide very useful postscripts: the first, for example, consists of a thorough definition of the Logo keyboard and control code combinations whilst the third contains a Dec-Hex converter for easy reference at any time. Appendix 5 concentrates exclusively on matrix manipulation for which Logo with its list processing facilities is ideally suited. The sixth and final appendix, on the other hand, explores Logo's methods of data-handling and shows how everything in Logo can be viewed, stored and manipulated as a property list.

The guide costs £12.00 and will probably be worth every penny for the programmer foundering in a sea of Logo (50% of all profits go to Greenpeace). You have the listings already typed out on disc for you, but unfortunately the book suffers from the same shortcomings that any disc-bound user guide will have: you can't put it in your pocket and dip in and out of at will, for starters. Neither will you be able to consult any part of it if you've got Logo up and running on your PCW already (precisely when you are going to need it the most). Printing out the book is your only alternative. ■

No Go Logo?

Logo was first developed as part of an American university project, called "Mathland" in the late sixties. It is now supplied free with the PCW when you buy it as DR LOGO - Digital Research's own implementation of the language for the PCW. It's argued though, that the full potential of the language can only be realised on a much larger machine.

***8000 PLUS* VALUE VERDICT 3/5**

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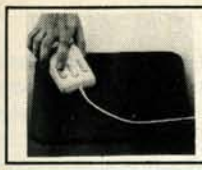

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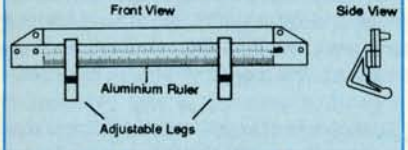

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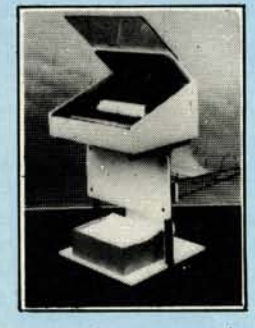

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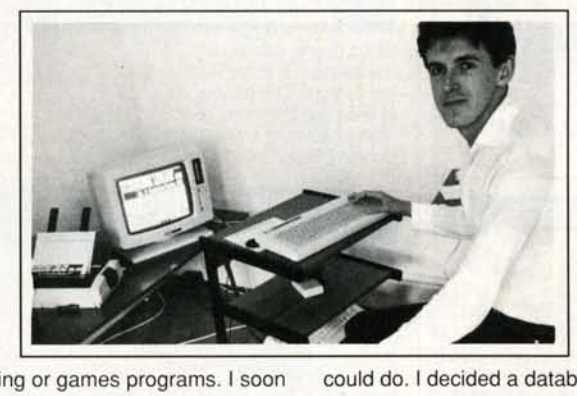
BUNCH OF FIVE

Librarian, secretary and gadget fan John Hudson tells a tale of five computers

It all began in June 1983: I was first introduced to micro computers during the installation of BBC machines in various of our Gateshead libraries. I realised that a home computer would be an interesting thing to possess – although at that stage I was pretty vague on what I would actually use it for once acquired. On the grounds of cost alone, it was going to have to be a toss-up between the Oric-1 and the ZX Spectrum although the latter had a nasty rubber keyboard with a whole host of inhospitable functions lurking under every key. The Oric on the other hand had a keyboard that was almost like a proper typewriter's, plus a printer interface, a powerful sound chip and a whole 48k of memory; it seemed ideal.

I carted it home from Lasky's with a new cassette deck and a free four-pack of software, and for several weeks got absolutely no sleep as I stayed up night after night playing with it. The computer's limitations soon became apparent; the manual was awful (now doesn't that sound familiar?) and BASIC had loads of bugs which made saving machine code or data files an exceedingly treacherous business. Worst of all there was no decent software! Yes, you couldn't fail to notice the sound generator and the Centronics interface was an impressive feature, but even the cheapest 'proper' printer then sold at £219, and there were no decent word processing or games programs. I soon got bored with working out my Life Expectancy from a listing published in Your Computer, the free flight game was pathetic compared to program demos on other machines in WH Smith's, and my chess prowess reached an all time low as I repeatedly failed to beat the computer on the most remedial level of play.



What could I do? Wait until I had some more money. I put up with it until the autumn of '84, as it became increasingly apparent that I would have been better off with a Spectrum. The documentation was so much more obliging, BASIC was much more user-friendly despite the keyboard, and there was a wealth of amazingly good software.

So the Spectrum became my second computer. The games were nice – particularly Psion's Scrabble, which has my vote at least for being the best computer game ever – but to use it for anything remotely serious, I needed a printer and a decent storage medium. By November I'd bought a ZX Expansion Pack comprising a serial/microdrive interface and a microdrive: a system which relied on tape rather than disc, but crammed 85k of data into a loop of tape smaller than a matchbox. It was a very reliable medium for the price, and I can't remember ever having any files corrupted. This purchase was followed by a Saga keyboard and a printer – the ultra-sophisticated Brother HR-5, a battery-operated thermal transfer printer with a maximum speed of 30 cps, an enormous mains adaptor and an impressive range of Epson-compatible functions (as long as you didn't need NLQ).

Can I have a word

Obviously a good word processor was called for: Tasword 2 came free with the expansion pack and was very reliable, but only gave you 64 characters per line; not really good enough if you were printing in Elite. So I consulted the magazines and, on their recommendation, tried three more programs: OCP's Word Manager, SofTechnic's The Writer, and Saga's The Last Word. Despite the glowing reviews they'd had, the first two were useless, full of bugs and basic design faults, and the publishers – particularly SofTechnics – were no help at all. The Last Word was just the opposite, incredibly versatile for a Spectrum program, managing to cram Search and Replace, Block Copy and Move, Alarm Clock, Calculator and Word Count into around 20k of code. You had to write your own BASIC for headers and footers, but Nick Buckenham, the programmer, was extremely helpful.

Over the next couple of years, my involvement with the local amateur dramatic society, the Progressive Players, gradually increased. At the 1987 AGM, I volunteered to become Secretary. For a while I had been vaguely dissatisfied with the presentation of my letters and the print quality of the Brother – which, I was infuriated to see, had plummeted in price since I'd bought mine. The PCW 8256, on the other hand, looked like the answer to my prayers but at £460.00 was way out of the question until in August '87 I heard a price reduction was on the way. This, coupled with my increased need to produce high-quality letters, minutes and so on provided an excellent excuse for investing in one.

This was a real computer, obviously much more than a basic word processor. Once I had designed a few templates for official use, I could whizz off my work for the Company much faster and the presentation was vastly improved just by the better quality print. 8000 Plus had already come into my life, and was instrumental in showing me what the PCW could do. I decided a database would come in handy to catalogue my collection of videotapes, cassettes and records, particularly my Ravel's Boleros which now number 22 (honestly). Because these all have the same composer and title, I needed a database which could sort on at least three fields to take in the conductor and orchestra as well. AtLast fitted the bill admirably, and now I just have to key in the few hundred items which make up the rest of my collection.

Publish and be bankrupt

I needed a desktop publishing program to produce newsletters for the Progressive Players, so I bought Database Software's The Desktop Publisher. I found it a dependable and bug-free piece of software, but excruciatingly slow in use. The headlines were jagged and horrible and the graphics facilities painfully limited. I really needed a mouse, so why not go a bit further and buy Stop Press with it? It proved to be an impressive piece of

software, although initially suffering from a few bugs. Moving around the screen, producing headlines and generally shuffling round and revising pages was so much easier and faster than with The Desktop Publisher that I started to use the new package for producing various leaflets and handouts at work.

Judging by reviews in 8000 Plus and elsewhere, Mini Office was an essential purchase. The word processor was fast and it had excellent database, spreadsheet and comms modules as well. I was most interested in the spreadsheet. The reviews had failed to warn me about the bugs in the package (8000 was as guilty as the rest!) and the situation was particularly bad with Mini Office because of the sheer number of them. If we 'hardened users' who appreciate the value of computers can get frustrated and puzzled by programs that don't work properly, how will newcomers and 'non-computerate' people feel? To say nothing of the time wasted and important data lost. After six months of negotiation with Database Software, I was left with a relatively bug-free version, although I have to say that the comms module still doesn't work exactly as it should.

I have always admitted to the Progressive Players that I'm more interested in the presentation of the work I do for them than the actual content. So it was only natural that I would want LocoFont. As soon as 8000 announced its arrival, I was on the phone to Locomotive to order it, and I wasn't disappointed. Like all their other software it is a well thought-out usable package with some very attractive typefaces; I'm particularly fond of Roman and Copperplate. My only criticism is that the 'i' dot in the otherwise excellent Finesse font merges into the letter, so that it can't be distinguished from the 'l'.

Making a B line

With all this software it was time to get a B drive and cut down on all the disc swapping. I had prompt service from Silicon City and the installation was fiddly but otherwise straightforward. There was an initial hiccough when I thought the drive was faulty, but your correspondent Roger Greaves in Issue 15 was right; you do have to reset CP/M if you're mixing single and double density discs in the drive.

In the past couple of weeks I've invested in LocoSpell, and have had great fun 'correcting' the names of our committee members: my alter ego is Join Hubs, and we also have a Jibe Scoot and Loose Wrist!

My other two computers so far have been the Psion Organiser and the Cambridge Z88. The Psion did not for me live up to its promise of being a portable diary-cum-Filofax: the alarms were inaudible, the keypad was a joke, it was maddeningly easy to lock up the machine with a simple error in OPL, and you had an absurdly short time to change the battery considering the eccentric design of its compartment. I persevered with it for several months, but when it finally gave up the ghost and wiped out my data on its own, I ran out of patience and sent it back to Psion demanding a refund, which – to their credit – they gave me with no quibbles.

With a little extra outlay I bought myself a Z88, which has been wonderful for composing documents on the hoof and provides a much better Diary facility than the Psion.

How can he possibly afford all of this stuff, I hear you cry. It's simple really, I do without a lot of other things. Sometimes all my clothes seem to be remnants from the 1970s, and my kitchen floor is still bare concrete... ■

Do you have a bad memory?

The only disappointment with the PCW was LocoScript's sluggish scrolling, particularly when writing a piece of fiction which might be ten pages or more. I remedied this by the purchase of LocoScript 2, which of course, was much better for long documents.

Or was it? When editing an eight-page chapter in the M drive, I was told the memory was full. I couldn't end the edit and the only alternative was 'Cancel Operation', losing a couple of hours' work. The culprit was, of course, the size of the program itself. I felt, not unreasonably, that Locomotive's advertising had been a bit misleading here: they advertise LocoScript2 as being suitable for long documents and, although they recommend the memory upgrade to make best use of the program, they forget to point out that it's an essential requirement for handling documents of any reasonable length.

It was clear that I was going to have to invest in a memory upgrade. In fear and trepidation, I opened up the cabinet, grasped my gas pipe repeatedly to discharge static, and plugged in my eight chips, sure that I was going to break a leg somewhere. But, amazingly enough, it worked. I now had 368k of space in Drive M and could get on with my nascent novel.

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ASSEMBLE AT DAWN

Steve Patient starts a new series: everything you wanted to know about machine code, but were afraid to ask...

If you've ever typed in one of our listings with a whole lot of DATA statements full of mixtures of letters and numbers tacked onto the end then you've already used machine code in your programming without realising it. Machine code is the only way to get at the parts of the machine that BASIC cannot reach, like the graphics screen to plot points or straight lines; also it runs a lot faster than BASIC. In a quickfire game or during a lot of text handling, this can be important.

Writing machine code isn't easy, but it is straightforward – and you have all the tools needed to write it supplied free with your PCW. All you need is is a few clues on *how to write*. Now read on...

What is machine code? Simple. If something has a COM extension after it then it's machine code, and if it doesn't, it isn't. Programs with the COM extension can be run directly from the command line, (that's the A> at the left of the screen). Astute readers will have noticed that BASIC is actually BASIC.COM on the disc.

That's right, BASIC is a machine code program. In fact it's a program that takes a text file (ie. a listing) parses it (which means deciding just what each item in the listing means, whether it's a key word, a variable or more often a syntax error) and finally does something specific depending on what it finds (print a word to screen or whatever). Because there is a lot of work in interpreting the text into machine code before the BASIC program can do anything with it, everything slows down, and worse, BASIC has to re-interpret the line all over again if it reappears later on.

If that's a number my name is F1F1

Now we come to all those strange looking DATA statements. How do you find out which numbers to use? This is the main problem with understanding machine coding; it's necessary to know something about programming, quite a lot about the machine and the operating system, as well as learning a new language all at the same time. This often results in so much confusion that the attempt is abandoned. This month we'll going to introduce a few of the facts you'll need to know to get started, no programming yet.

Those DATA statements in the BASIC programs are just a way of representing a small machine code routine. It is possible to write a program entirely in machine code, nothing but numbers, but as this would be intolerably difficult, we use an *assembler* which works on a 'listing' consisting of mnemonics, such as those below, and turns them into a machine code file for us. The assembler supplied free with your PCW is MAC, so we will be using that.

Computers can be thought of as a lot of little switches being turned on and off at high speeds. These switches operate in banks of eight. Each switch represents one 'bit' and each group of eight represent one 'byte'. (If you've ever used SID to muck about with a program, each number you see on the middle table like E4 and 6D and 35 is one byte. A single character like A or * occupies one byte). Their configuration at any one moment always means something to the PCW though the meaning can change depending on the number that came before. In fact each byte can represent any number between zero and two hundred and fifty five (which is why there are 255 ASCII characters for example). How is this done?

Although each bit can only be turned on or off, so representing zero and one, by keeping the switches in bunches of eight and doubling the value of the column to left the values they can represent mount up quite quickly.

At the heart of the PCW is a thing resembling a fossilised centipede called a Microprocessor (to distinguish it from the box full of boards that computers once used to do the same job). The one in the PCW is known as a Z80A. The Z80A is a more powerful chip than the 8080 it replaced but it can carry out any instruction the 8080 can: this is a good thing as CP/M itself is written in 8080 machine code.

The PCW can store lots of numbers in its memory, but obviously these are useless unless you know where in the memory the number is stored – its address, or 'where it lives in memory lane'. Just like the Post Office, computers work in postcodes rather than intelligible English, so you end up giving instructions like 'get the number which lives at address 0D5F, add it to the number living at 3E42, and put the result in 109E'

The numbers we've been talking about are presented to the Z80A on eight of its many legs simultaneously. The first number in any program is taken as an instruction to do something. Some instructions need data immediately, a number or an address for example, and these are stored in line with the code. An instruction that needs two bytes of data would be followed by two bytes of data and the microprocessor would expect the third byte to be the next instruction.

These instructions are of several kinds; instructions to load a byte or a word, save a byte or a word, add or subtract bytes; they can be logical instuctions like AND, OR, XOR. There are instructions that shift bits right and left. The 8080 instruction set are listed and at some point we'll use one or two of them. Not yet though.

Light MAC

A typical instruction in machine code is CALL 0005H, which asks CP/M to do something (exactly what depends on how you've set things up). The H after a number means it's hex – see the box. This translates into CDH 05H 00H in machine code. Seems simple enough, you say, why do I need it in

Jargon buster

Some jargon to drop into a conversation you'd like to stop:

A BIT (short for Binary digIT) is one switch, and can only be on or off.

A NIBBLE is four bits and can hold values up to 0FH or 15

A BYTE is eight bits and holds values up to FFH or 255

A WORD is two bytes and holds values up to FFFFH or 65535

A LONGWORD is four bytes and the numbers get silly, 2 to the power 31

RAM Random access memory

ROM Random access memory that can't be written to

MNEMONIC Name given to machine code instruction eg. LDA, XOR etc

TPA Transient Program Area. Where COM files live

BDOS Basic Disc Operating System. (Nothing to do with BASIC language)

BIOS Basic Input/Output System

CHIP Long piece of potato with square cross section

REGISTER a location inside the Z80 where bytes are held and manipulated.

Classic and classy

The programming utilities supplied with the PCW only handle 8080 mnemonics and don't understand the extended Z80 instruction set. On the other hand they are free. On top of that they remain some of the most powerful programming tools around. This does not include ED.COM.

If you feel an overpowering urge to work with code you will need a decent text editor; not a word processor. Although having said that Protext works fast enough to use from drive M. A very nice full screen text editor wil be on our forthcoming disc offer. See special offers.

Hex and backwards? Well, think of the postcode business. An address like 'North Ferriby, Yorkshire' doesn't give you much clue where it is, but the postcode 'HU14 3LE' pins it down to near Hull (HU) then a specific area (14) then a road (3) etc. down to an individual house (almost). The postcode suits the way the Post Office section up the country; similarly, hex suits the way computers store numbers.

The Z80A stores numbers from the top of memory down. This seems a bit back to front to us, or at least to me. A two byte number will be stored with the LSB (Least Significant Byte), at a lower address than the MSB (Most significant byte). It's like having the postcode above as '3LE HU14'.

Think of an address which in English would be 9073 – very hard to translate into binary, and even harder to imagine stored in memory, but given 2371H, its hex equivalent, we will know that the LSB is 71H and the HSB is 23H. They would appear in a data statement as 71H, 23H, in that order. In fact the list of DATA statements is nothing more than a snapshot of the machine's memory.

By looking at the list of binary numbers in the box you can see that the pattern of bits in memory will be 7, 1, 2, 3 – ie. 00000111 00000001 00000010 00000011. Each hexadecimal number in the DATA statements represents a specific memory location and the pattern it holds. By using hexadecimal numbers we need only worry about sixteen patterns that map exactly onto the bytes in memory and suit the physical layout of the memory nicely. Once you begin working in machine code this ability to see at a glance exactly what each memory location holds is so useful that learning hexadecimal is a small price to pay. ■

Hex rated stuff

Hex is another way of counting beloved by programmers. In it you count 0, 1, 2, ... 8, 9, A, B, ... E, F, 10, 11 and so on. 'C' is thus pronounced 'twelve' and '12' as 'eighteen'. Binary is yet another.

BINARY	REAL LIFE	HEX
00000000	0	00H
00000001	1	01H
00000010	2	02H
00000011	3	03H
00000100	4	04H
00000101	5	05H
00000110	6	06H
00000111	7	07H
00001000	8	08H
00001001	9	09H
00001010	10	0AH
00001011	11	0BH
00001100	12	0CH
00001101	13	0DH
00001110	14	0EH
00001111	15	0FH
00010000	16	10H
00010001	17	11H
00010010	18	12H
00010011	19	13H

...and so on!

The 8080 Instruction Set

This is a reference table you'll be coming back to a lot. It's the complete list of instructions in 8080 language, the one we'll be using. It'll mean nothing yet, but don't worry – it's only for lookup later on. If you can photocopy it do so and put it up on your bedroom wall.

The diagram below is of the Z80 registers, again for reference later. We will only be using the main register set, the program counter and the stack pointer.

Load and save instructions

LDAX rp	load A from the address in BC or DE
LDA aaaa	load A from address
LHLD aaaa	load HL from address
LXI rp,nnnn	load register pair with address (any 16 bit number)
MOV r,r	load one register from another
MVI r,nn	load register immediate
SHLD aaaa	load address with bytes held in HL
IN nn	load A with byte from port p
OUT nn	send byte in A to port
PUSH rp	put copy of register pair onto stack
POP rp	take top of stack and put in register pair
SPHL	load stack pointer with HL
STA aaaa	store A at address
STAX rp	load address in BC or DE with A
XCHG	swap HL and DE
XTHL	swap stack address with HL

Call instructions

CALL aaaa	call subroutine at address
CC aaaa	call if carry set
CM aaaa	call if sign negative
CP aaaa	call if sign positive
CNC aaaa	call if carry clear
CNZ aaaa	call if zero flag clear
CZ aaaa	call if zero flag set
CPO aaaa	call if parity odd
CPE aaaa	call if parity even

Jump instructions

JMP aaaa	jump to subroutine
JZ aaaa	jump if zero
JNZ aaaa	jump if not zero
JPE aaaa	jump if parity even
JPO aaaa	jump if parity odd
JC aaaa	jump if carry set
JNC aaaa	jump if carry clear
JM aaaa	jump if sign negative
PCHL	jump to address in HL swops HL and PC

Return instructions

RET	return from subroutine
RC	return if carry set
RNC	return if carry clear
RNZ	return if not zero
RZ	return if zero
RNZ	return if not zero
RM	return if sign negative
RP	return if sign positive
RPE	return if parity even
RPO	return if parity odd

Mathematical instructions

ACI nn	add immediate to A with carry
ADI nn	add immediate to A with no carry
ADC r	add to A from register with carry
ADD r	add to A from register with no carry
SUB r	subtract register from A
SUI nn	subtract immediate from A
DAD rp	add contents of BC or DE to HL – result in HL
SBB r	subtract contents of register and carry from A
SBI nn	subtract immediate and carry from A
DCR r	decrement register
INR r	increment register
DCX rp	decrement register pair
INX rp	increment register pair

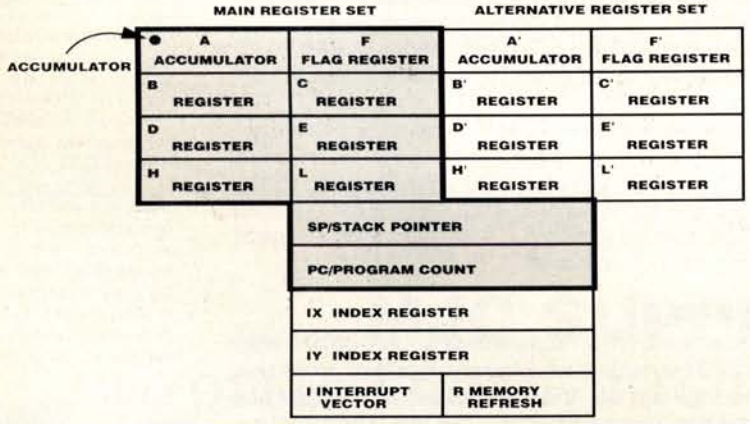
Bit level operations

ANA r	AND A with register-result in A
ANI nn	AND A immediate – result in A
CMA	complement number in A
CMC	complement carry flag
STC	set carry flag
DAA	decimal adjust A – BCD arithmetic
ORA r	OR accumulator with register
ORI nn	OR immediate
XRA r	XOR register with A
XRI nn	XOR immediate
CMP r	compare A with register
CPI nn	compare immediate
RAL	rotate A and carry left
RLC	rotate A left bit 7 to carry
RAR	rotate A and carry right
RRC	rotate A right – bit 0 into carry

Miscellaneous

RST nn	a kind of jump – 1,2,3,4,5,6,7,
DI	disable interrupts
EI	enable interrupts
HLT	stops the Z80A
NOP	no operation – dummy instruction

MAP OF THE Z80 REGISTER SET SHOWING THE REGISTERS USED BY THE 8080 INSTRUCTION SET



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A QUIZZICAL LOOK AT...

Who wrote this review – was it a) The Moderator of the Church of Scotland b) ex-King Zog of Albania or c) Sharon Bradley?

Why are people so interested in testing their knowledge of trivia? (That was a rhetorical question). With the Christmas market clearly in mind, three new quiz-oriented packages are now out to keep you and your family educated and amused on Boxing Day afternoon. How do they perform? (answers below).

ULTIMATE QUIZ

£14.95 inc VAT (full version) ● David Greenhough Computing (0274 640764) ● All PCWs

Ultimate Quiz was originally intended as an educational aid for school-age children. But since it also incorporates an editing file, so that the quiz can be updated with questions of your own devising, it seems reasonable to suppose that it can also provide hours of general knowledge fun for players of any age or occupation.

Ultimate Quiz is surprisingly versatile in that it can be played by anything up to eight players. There are basically two quiz games available on the disc: one file, GENERAL.QUZ, offers a seemingly endless supply of Trivial Pursuits style multiple choice questions. Few of them are obvious and your answering keypress is rarely a confident one. As always the knowledge can be a little artificial and often begs more questions ('In which year was the pedestrian crossing introduced' – to whom? 'When was the first football World Cup' – when was the first World Cup what? Held? Lost? Won?)

The second quiz supplied on the review copy is based on the various facts and figures to be found in the Highway Code. Apart from helping you brush up on your driving skills, or providing a slightly out of the ordinary way of committing facts to memory for those with driving tests pending, its main purpose is probably as a demonstration of a subject-specific application. Still, handy if you have a PCW running through your cigar lighter.

Whichever of the quizzes you select, you have the choice of playing it either with or without a noughts and crosses program.

Time is a spice

At the start of each game, you're given the option of selecting a timer for each question you answer just to spice it all up a bit. Playing noughts and crosses with the timer set to 5 and the level of difficulty on 4 might just convince you that it isn't necessarily all kids' stuff. To avoid questions being repeated (and this is where a lot of rival programs fall down) the program will keep a record of the ones which have been asked. Only if the quiz is played really long and hard will some of the questions start to provoke déjà-vu.

Another of the program's major strengths lies in its Edit program which allows you to devise your own quiz files. It's quite easy to do. You can therefore adapt it and make quizzes to test your children on Chemistry or Maths or whatever, giving them the chance to learn even more useless knowledge. You enter your questions on a set format of question-plus-three-multiple-choice alternatives. The minimum number allowed is 11, the maximum 100. Although the quiz program will instantly reject any file with less than 11 questions in it, the Edit program allows you to save a file with less than that ready for adding to another day.

SUPERMATHS

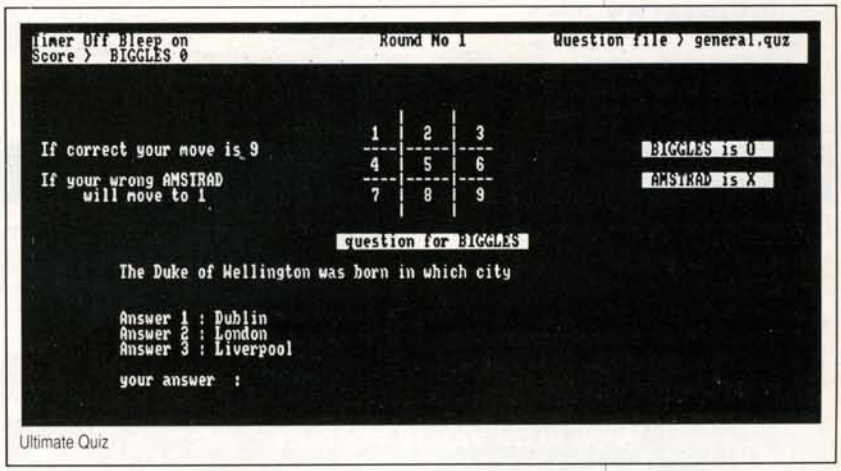
£16.95 ● Abacus Software (0689 36293) ● All PCWs

One of the great misconceptions about mathematics is that it involves numbers: that's arithmetic. As any undergraduate could tell you, the further you go in maths, the fewer numbers you see. Primary school students can count up to a thousand; secondary students only go up to a hundred and replace awkward numbers by *x* and *y*. In A-levels *a* to *z* are all used up and Greek letters are commandeered to replace all numbers except 0, 1 and infinity. By University, clever students doing set theory can make you doubt that numbers exist at all, and that they're just an accountants' fiction to keep them in work. Which is why most mathematicians become accountants.

However, numeracy is always a Good Thing to be Encouraged, and Supermaths is a new educational program which has been written specifically for the Amstrad PCW series of machines. Its aim is to improve basic numeracy – whatever the age of the user – although it will probably be of the most benefit to school-going PCW users.

The program covers the four basic arithmetical operations of addition, subtraction, multiplication (you can specify exactly which table you want to tackle) and division. There are four levels of difficulty: you can choose whether you want to carry out the various operations using just units, tens, tens and units or finally, at the most advanced level, hundreds tens and units.

The questions are presented in quick-fire volleys of ten, so the better your mental arithmetic the faster you'll get through it. (There's no time limit, though, on answering the questions; the only thing that's likely to put you off is having somebody standing behind you watching). If your mental arithmetic is a bit dodgy, you could always use the program for



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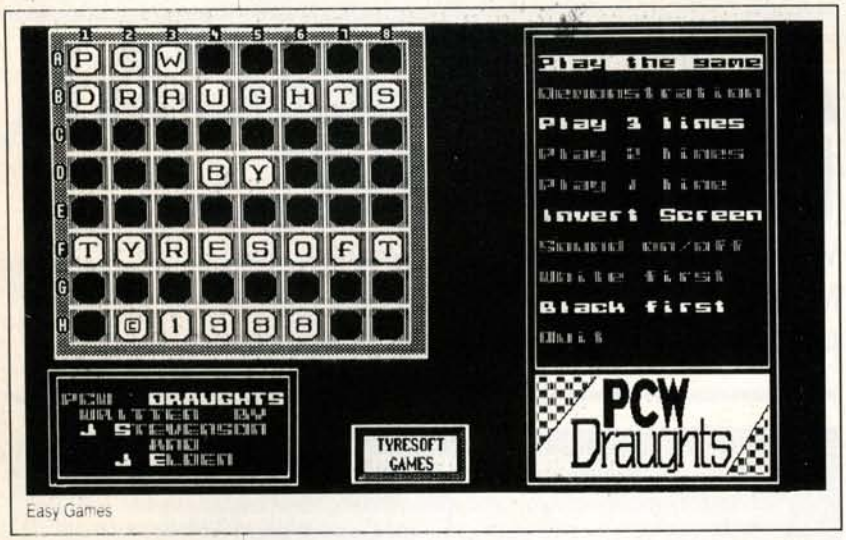

Easy Games

calculator practice. If you get all ten questions right, you'll be presented with a chirpy smiling face of encouragement and the option of continuing with another ten questions along the same lines or returning to the main menu to choose either a different level or a different operation. After a series of five happy faces, you get an owl – the highest accolade the program offers – although by that stage you'd probably be better off moving up to the next level of difficulty. A few more interesting graphics would have been nice to keep the attention of the younger children. Scores are automatically recorded on returning to the opening menu.

Test of time

You can also use the program in Test mode which involves telling the computer how long you want the test to go on for in minutes. The creators must have thought that a whole hour of Supermaths would be straining the bounds of human endeavour a little too much and wisely fixed a maximum time limit of just 60 minutes. The program also offers a highly original Worksheet mode, which enables you to produce worksheets on the dot matrix printer in one of two styles: either a problem a line or problems set down the page. All you have to do is select the operation and the level of difficulty. You can print out several copies of the same sheet or alternatively several sheets of different problems using the same operation and degree of difficulty.

Supermaths can provide hours of competitive fun with family and friends vying with one another, on different levels, to achieve the highest score. Above all, its great strength lies in its simplicity; it has successfully avoided falling into the trap of losing sight of its objectives by trying to be too clever. Supermaths won't transform a mathematophobe into an overnight Karl Gauss, but what it will do perfectly – until the cows come home if you like – is exercise basic numeracy skills.

ULTIMATE QUIZ

PLUSES
- ▲ Can add questions of your own
- ▲ Up to eight can play
- ▲ Questions are challenging

MINUSES
- ▼ Some questions rather esoteric

***8000 PLUS* VALUE VERDICT 4/5**

SUPERMATHS

PLUSES
- ▲ Efficient scoring method
- ▲ Practice and test modes
- ▲ Can produce own worksheets

MINUSES
- ▼ Numeracy rather basic

***8000 PLUS* VALUE VERDICT 3/5**

EASY GAMES

PLUSES
- ▲ Easy to use and good fun
- ▲ Nice graphics to appeal to younger users
- ▲ A versatile program with three different types of games

MINUSES
- ▼ No long term appeal
- ▼ No save facility in draughts game

***8000 PLUS* VALUE VERDICT 2/5**

EASY GAMES

£14.95 ● Tyresoft Software (0602 728981)

● All PCWs

Easy Games is a collection of three games on disc which have been created to appeal to children between the ages of seven and fourteen. That's not to say, however, that the games included – a Trivia Quiz, Draughts and Puzzles – won't be attracting any adult interest. Some of them are quite compelling.

The Trivia Quiz incorporated on the disc was first reviewed in our July issue (#22, page 22). Again, you have three lives and a time limit in which to answer as many multiple choice questions as possible. By adult standards, they're not particularly heavyweight but quite good fun nonetheless: still, there can't possibly be that many kids out there who really think that the name of Dick Turpin's equine partner in crime was Red Rum or that J. R. Ewing wrote The Lord of the Rings – or can there? You're still allowed to commit three incredibly silly answers to screen (gaffs being represented by the eternal frilly knickers in the top left hand corner of the screen); as before, if your score is deemed to be remotely respectable then the program will ask your name and record it alongside those of some of the greatest intellects of our time, to wit Frank Bruno and a cat called Betty.

Draughts is quite good fun as well although double and triple jumps (the trademark of an exciting game of Draughts) are unfortunately very much frowned upon by the program, ie. not allowed. You play against the computer and the moves are made using the cursor and [ENTER] key respectively. You also have the option of playing a three, two or one-line game, which, as it suggests, means that each side (the computer is always black incidentally) begins the game with three, two or maybe only even one line of draughts. You can also get a demonstration game going if you like before you start to see just how the game's played although ample instructions are provided as soon as you select the game.

The third set of puzzles involves reassembling various pictures by moving a space around a grid. Depending on how hard you want to work at it, you can ask the program to shuffle the picture in such a way that it is either very easy or marginally more difficult to reassemble them correctly. If the puzzle is in imminent danger of being unravelled, you can always hit the [M] or [E] button to juggle the picture up some more.

The only snag with Easy Games is that the challenge value, not to mention the appeal, may start to flag as various questions, answers, moves and shuffles start to look familiar. Easy Games is basically good fun and quite compelling for the young PCW operator because of its very nicely done graphics; it's a shame its creators don't seem to have found a way of safeguarding the program's long-term interest. ■

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LUCKY FOR SUM

The Mini Office series part 9: more on the spreadsheet

If you read last month's article you'll know what a spreadsheet is, what it's for and why it's a Good Thing. (You'll also know how much it will cost you to produce your own desktop publications). So here are a few more of the functions available in Mini Office to make setting up and using a spreadsheet easy...

Change? Cursor can

You can change the direction the cursor moves after you enter something in a cell. Press [ALT]A a few times and at the top of the screen you see various messages 'Up', 'Right' and so on. This tells you the direction the cursor moves in after each entry. If you have a long column of figures to enter, you obviously make it 'Down'. If you're moving around in various directions, stop it moving, displayed as a blank at the top of the screen.

Get it from...

Mini Office is available from Database (0625 878888) for £29.95 and a bit cheaper from various mail order places (like us!). A good tutorial book if you don't like the manual is by John Hughes from Sigma Press (0625 531035) for £11.95.

Moving around

You can move about a spreadsheet by using the cursors, naturally, but in large sheets you'll want to hop around a lot. Pressing [ALT]G followed by a cell number – A1, Z34, AD176, CW398 and so on – moves you straight there.

Last month highlighted the fine-tuning power of a spreadsheet – to juggle complex sets of interrelated figures to produce the most efficient result (in that case, working out how much to charge for your parish magazine).

Spreadsheet manuals usually give you examples like doing your household accounts. Fine, except that household accounts are done much quicker with a calculator than a spreadsheet. What spreadsheets are really good at is preparing tables of figures – for example, conversion tables.

Imagine the work involved in preparing a ready reckoner conversion table such as pounds sterling to Deutschmarks – for your restaurant which has a lot of German guests, perhaps. Straightforward, but tedious in the extreme. And whenever the exchange rate changes, the entire table must be recalculated. With a spreadsheet, very easy – of course the steps here are roughly the same for any type of tables such as imperial to metric converters, price lists and so on.

Type `office` and select the spreadsheet as usual from the main menu. Taking 'Edit spreadsheet' gives you a new blank screen. Type the title `Pounds to Deutschmarks Ready Reckoner` or whatever and put the current exchange rate in a cell somewhere (say cell D2) the idea being that if you only refer to the exchange rate by this cell number in your calculations, you can come back and change the figure in the cell when the rate changes and your table will be automatically updated.

You want a printout looking like a ready reckoner, with pounds down the left and pence across the top, like this:

			Pence		
£	0.00	0.10	0.20	0.30	0.40...
0	0.00	0.31	0.62	0.94	1.25
1	3.12	3.43	3.74	4.06	4.37
2	6.24	6.55	6.86	7.18	7.49

etc.

To get, say, the Dm equivalent of £2.20, you go down the left £ column to the 2, then go across to the 20p column. The figure there is 6.86, so £2.20=Dm6.86.

So, put 'pence' and '£' as headings. In the £ column you can justify everything right instead of left with [ALT]R; it looks neater. (Another thing to do is to have no decimal places showing instead of the usual two. Press [ALT]D, the left cursor twice, then [ENTER]).

Now you could type in the 'pence' headings across the page in adjacent cells, 0.00, 0.10...0.80, 0.90. These are all displayed to two decimal places which is what you want for money, though you can change it as above. However, you can experiment with the copying facility. Enter 0 in the first heading cell, which is C5 say. Then move to the next on the right, ie. D5, and press [f5] to tell Mini Office you want to put a formula in here: whatever is in C5 plus 0.1. Give the formula as `C5+0.1`.

Fair copy

So why not just enter 0.1 as a number? Well, you can now copy this formula to the rest of the cells in that row. With the cursor still on D5, the cell with the formula, press [COPY] and select 'S' for Single cell copy. A prompt line at the top tells you to move the cursor to the destination of the copy of this cell. Move one to the right to E5 and press `R` for relative copy.

You'll see the formula in cell E5 displayed at the top of the screen as `D5+0.1` – the original was of course C5+0.1, but Mini Office has copied 'relatively', ie. it's taken the previous formula to mean 'take the number in the cell on my left and add 0.1' and so translated to have the same effect for its new cell.

You can keep copying along the row by pressing the right cursor and `R` continually (until you get to 0.9 of course). Press [CAN][ENTER] to finish and cursor back to the beginning. You should have the figures 0.0, 0.1...0.8, 0.9 displayed.

Absolute copying is where the contents of a cell are copied *exactly* – in the above example, if you'd copied the row absolutely instead of relatively, instead of 0.0, 0.1, 0.2 etc. you'd have 0.0, 0.1, 0.1, 0.1... with *each* cell after 0.0 containing C5+0.1, ie. 0.1.

Put a zero in the top of the £ column (suppose this is B6) and then move right (ie. to C6). Clearly £0.00 is Dm0.00, but you want to put a formula here to calculate the Dm figure so that you can duplicate it later.

You know that figures in this column are whole pounds, so the Dm equivalent is just the number of pounds (as displayed in the cell to the left) times the exchange rate (which was put in cell D2, remember). So, in cell C6, press [f5] for formula and enter `B6*D2`.

Relatively speaking

Now, as you go along rightwards from here, you add ten pence per column to the £ amount. So, if you move right to cell D6 and enter the formula `C6+0.1*D2` you're telling Mini Office to take the contents of the column on the left and add the Deutschmark equivalent of ten pence (£0.1 times the exchange rate, which is in D2). Now you can copy relatively like you did above for the rest of that row... except that if you try it the figures will be wrong.

The reason is that in copying the formula relatively, the D2 in the formula (the cell holding the exchange rate) becomes E2, F2, G2 and so on. These cells have nothing in them so the 'exchange rate' for these copies becomes zero, knocking out the figures.

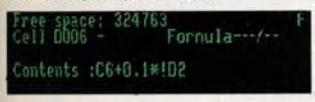
You can't copy absolutely, because then every cell will have exactly the same amount in it as the one it was copied from. What you want is to have the C6 bit copied relatively but the D2 bit constant, ie. copied absolutely.

Mini Office lets you do this by putting a ! in front of the D2. Enter the formula in D6 as `C6+0.1*!D2` and when you copy this relatively to the right you'll see it becomes D6+0.1*D2, E6+0.1*D2 and so on. Which is what you want, so you can continue copying to the end of the line.

Now you have the first row done you're almost finished. Copy the row 6 ([COPY], then 'R' for row, cursor down, then 'R' for relative) to the one below. It'll be right except for the entry in the £ column, which is zero. What you want is 'the number above this plus one', so enter this cell (it should be B7), press [f5] for formula and enter `B6+1`.

Copying a row

After updating the figures with [f3]



The formula for cell D6

Selecting sideways printing

Functional analysis

Mini Office has a variety of useful functions you can put in formulae. SUM(A3:F3) will calculate the sum of all the cells in row 3 from A to F inclusive. SUM(BA1:BA187) will do the same for cells in column BA from 1 to 187 inclusive, and SUM(A1:D3) will total all the figures in columns A to D and rows 1 to 3 inclusive.

With the same options for the range of cells you calculate from, MEAN(A3:B6) will work out the average value of numbers on those cells, MAX(A1:C4) will get the biggest value, MIN(A1:C4) the lowest value.

ROW() (yep, empty brackets!) gives the row number of the cell it's in, COL() the column number. These are extremely useful – in the conversion table example here, you can simplify things a lot. The headings row in cells C5, D5, E5... (0.0, 0.1, 0.2...) contain the formulae (COL()-5)/10 duplicated relatively. The column with the £s, ie. cells B6, B7, B8... (0, 1, 2...) has formulae like ROW()-6. The cells with the conversion formulae in them, eg. cell D6, all have the formula D2*(ROW()-6+(COL()-5)/10) again duplicated relatively.

IF was mentioned last month. A full list of the functions appears in the Mini Office manual, though how often you use RAD to convert from degrees to radians or LOG to find logs to base 10 depends on what you use your spreadsheet for.

Original print

Now you can print out your ready reckoner. From the main spreadsheet menu select 'Print'. From the print menu change the options displayed by moving onto them and pressing [ENTER] to change an option.

'Headings' lets you select whether you want 'Rows', when you'll get 001, 002, 003 etc. down the side, 'Columns' when you get A, B, C etc. along the top, both of them, or 'None' (they mean 'neither').

'Printer type' lets you select the normal printer ('PCW') or your other printer (eg. dot matrix on a 9512) via 'Parallel'. Printer width is self explanatory and 'Print style' lets you choose condensed print for large spreadsheets, high quality (NLQ) draft quality or – a very useful option – 'Sideways printing', allowing you to print out very wide sheets on continuous paper without having to break them up. Load the printer, print the whole spreadsheet, and there you have it. On a 9512 you can't get sideways printing on your supplied printer and condensed print looks best with a 17 pitch daisywheel. The printer thinks for a few seconds before it starts, so be patient!

When the exchange rate changes, just load up the sheet again, edit cell D2 to show the new rate, recalculate ([f3]) and print the new sheet. It'll all be updated for you. ■

Expletive deleted

To delete a single cell press [f1] then 'y' to confirm. To delete a row or column press [CUT] followed by 'r' for row, 'c' for column and then 'y' to confirm. If you just want to change the contents of a cell, move to it and press [f7]; you can then edit it with the cursor and delete keys.

Now copy this row 7 relatively to the next down and continue downwards ad nauseam. To avoid waiting for all the figures to be recalculated every time you do anything, you can press [ALT]U. This turns off this auto-updating and puts the phrase [Functi] in every cell with a formula. You can carry out your copying much quicker this way, though it's easy to get lost with lots of [Functi]s around. To force an update, press [f3] and all the figures are recalculated. To return to auto-recalculation press [ALT]U again.

Your conversion table is now ready for printing out – you can check quickly that it's OK by looking at a few obvious figures (£10, £100 etc) and making sure all the figures in between go up steadily.

Save it either by [ALT]I or [EXIT], 'Load/Save' and 'Save data'. You can enter a new name for the file (the ending must be .SPR) or accept the one given by pressing [ENTER]. [EXIT]s get you back to the Spreadsheet menu and you can continue editing the sheet ('Edit') or wipe it clean and start again (from Spreadsheet menu 'Alter spreadsheet', then 'Wipe', [EXIT], then 'Edit').

Loading a spreadsheet is done in the same way to saving one except you 'Load data' instead of 'Save data'. You can select the file to load by putting the cursor over the right name on the directory which appears and [ENTER]ing. Once done you [EXIT] twice to the main spreadsheet menu and 'Edit'.

Condensed print on a 9512 using a 'Mini Gothic' daisywheel

£ to Dm Conversion Table
Current exchange rate: 3.12

	pence						
£	0.00	0.10	0.20	0.30	0.40	0.50	0.60
0	0.00	0.31	0.62	0.94	1.25	1.56	1.87
1	3.12	3.43	3.74	4.06	4.37	4.68	4.99
2	6.24	6.55	6.86	7.18	7.49	7.80	8.11
3	9.36	9.67	9.98	10.30	10.61	10.92	11.23
4	12.48	12.79	13.10	13.42	13.73	14.04	14.35
5	15.60	15.91	16.22	16.54	16.85	17.16	17.47
6	18.72	19.03	19.34	19.66	19.97	20.28	20.59
7	21.84	22.15	22.46	22.78	23.09	23.40	23.71
8	24.96	25.27	25.58	25.90	26.21	26.52	26.83
9	28.08	28.39	28.70	29.02	29.33	29.64	29.95
10	31.20	31.51	31.82	32.14	32.45	32.76	33.07
11	34.32	34.63	34.94	35.26	35.57	35.88	36.19
12	37.44	37.75	38.06	38.38	38.69	39.00	39.31

Sideways printing on an 8000 printer

£ to Dm Conversion Table
Current exchange rate: 3.12

	pence								
£	0.00	0.10	0.20	0.30	0.40	0.50	0		
0	0.00	0.31	0.62	0.94	1.25	1.56	1		
1	3.12	3.43	3.74	4.06	4.37	4.68	4		
2	6.24	6.55	6.86	7.18	7.49	7.80	8.11	8.42	8.74
3	9.36	9.67	9.98	10.30	10.61	10.92	11.23	11.54	11.86
4	12.48	12.79	13.10	13.42	13.73	14.04	14.35	14.66	14.98
5	15.60	15.91	16.22	16.54	16.85	17.16	17.47	17.78	18.10
6	18.72	19.03	19.34	19.66	19.97	20.28	20.59	20.90	21.22
7	21.84	22.15	22.46	22.78	23.09	23.40	23.71	24.02	24.34
8	24.96	25.27	25.58	25.90	26.21	26.52	26.83	27.14	27.46
9	28.08	28.39	28.70	29.02	29.33	29.64	29.95	30.26	30.58
10	31.20	31.51	31.82	32.14	32.45	32.76	33.07	33.38	33.70
11	34.32	34.63	34.94	35.26	35.57	35.88	36.19	36.50	36.82
12	37.44	37.75	38.06	38.38	38.69	39.00	39.31	39.62	39.94
13	40.56	40.87	41.18	41.50	41.81	42.12	42.43	42.74	43.06

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VISA

WRITING A COLUMN

Two column printing – all done by LocoMail! Alan Cossey shows you how...

Printing in more than one column using LocoScript has engaged the attention of some of the best minds of this generation. None of the earlier solutions were entirely satisfactory. However, with the coming of LocoMail, which all 9512 owners get automatically, there is a better way.

This method uses LocoMail's ability to join up details from two or more pages of a data file to give one resulting page with two or more columns. This method is often used for printing labels.

The first step is to produce a master document with all the LocoMail instructions. This document should have the same number of lines per page in the body of the text as your final document requires.

For example if your final document requires 60 lines per page, this master document should also have 60 lines per page. It should also have tabs set for the left edge of the second columns. With margins at 10 and 82, a tab should be set at column 46.

When this has been completed type in the instructions here (fill in all the intermediate lines!). It must have the same number of lines per page as the original document. It should also have tabs set.

```
(+Mail)ADL1=""
ADL2=""
ADL3=""
...and so on...
ADL58=""
ADL59=""
ADL60=""
tab="[TAB]"
Loop="(+Mail)ADL1=ADL1 & L1 & tab
ADL2=ADL2 & L2 & tab
ADL3=ADL3 & L3 & tab
ADL4=ADL4 & L4 & tab
...and so on...
ADL58=ADL58 & L58 & tab
ADL59=ADL59 & L59 & tab
ADL60=ADL60 & L60 & tab
Loopcount=[Loopcount-1]
$+(-Mail)"
Loopcount=2
@Loopcount %Loop
(+Mail)ADL1(-Mail)
(+Mail)ADL2(-Mail)
(+Mail)ADL3(-Mail)
...and so on...
(+Mail)ADL58(-Mail)
(+Mail)ADL59(-Mail)
(+Mail)ADL60(-Mail)
(+Mail)$-(-Mail)
```

Save this as MASTER.DOC or something. You can use it again to 'columnise' any documents which have a first page like the one detailed below.

ASCII the way to go

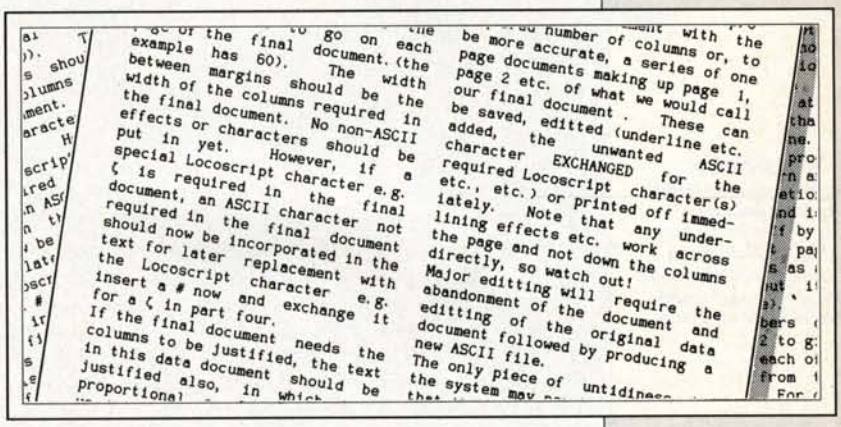
The next step is to write the text you wish to print in columns. This is to all intents and purposes a normal LocoScript document except for the first page, which is as follows. This example is for 60 lines per page. One L-number per line, as in the box in the margin. Then continue with the text to be put into columns.

The number of L's in this record pattern should be equal to the number of lines to go on each page of the final document.

The width between margins should be the width of the columns required in the final document. No non-ASCII effects or characters should be put in yet. If the final document needs the columns to be justified, the text in this data document should be justified also.

To have your final document finish with a part page of two columns of equal length, break the page in the middle of the text that will form that last page in the final document by pressing [+]LL (last line) on that line. Do not use [ALT][RETURN] to force a page break as this will leave the last line of the left column unjustified.

Save the data document as DOC.1 or whatever and then produce a 'page image' ASCII file from it ([f1] Loco 2, [f7] Loco 1) called DOC.ASC say. This is to insert a carriage return at the end of each line of text, to act as a record separator.



Becoming a Stylite

Merge the master document MASTER.DOC with DOC.ASC. This will produce a final document with the required number of columns or, to be more accurate, a series of one page documents making up page 1, page 2 etc. These can be saved, edited (underline etc. added, the unwanted ASCII character EXCHANGED for the required LocoScript character(s) etc.) or printed off immediately. Prepare other documents to be 'columnised' in a similar way to DOC.1 (copy and paste the first page from DOC.1 to save typing it out again!). MASTER.DOC of course can be used again for the merge.

Note that any underlining effects etc. work across the page and not down the columns. Major editing will require the abandonment of the document and editing of the original text and the production of a new ASCII file.

The only piece of untidiness in the system is that the formation of the ASCII file inserts a carriage return and page-break at the end of each page rather than the required page-break alone. This may have the effect of producing an extra carriage return and tab or two, but their deletion soon sorts the problem out and is easy (do not be put off by one line going onto the next page initially – the deletions as above will automatically put it back on the correct page).

Page numbers can be set in LocoScript 2 to give consecutive numbers if each of the documents resulting from the merge have been saved. For details of this see page 195 of the LocoScript 2 manual. ■

More! More!

Note that the number of columns in the final document is determined by the value assigned to the variable 'loopcount' ie. if 'loopcount' is 2, then two columns will be produced (you'll have to set tabs appropriately and probably choose a smaller size print).

```
L1
L2
L3
L4
...and so on...
L57
L58
L59
L60(+LL)
```

HEY PRESTEL

Andrew Bibby plus PCW, modem, and Prestel: what does it add up to?

Prestel sounds too good to be true: any information you want available instantly on your computer through the phone lines, just as they do in travel agents, booking offices and banks. Unless you live next door to a reference library, it seems just the thing for writers, journalists, business users...

But what sort of animal is it? Is it a dark horse, or a pig in a poke? Will it bring home the bacon, or take you on a wild goose chase? Our man with the modem tells all...

TV services

Prestel is sometimes confused with BBC's Ceefax and ITV's Oracle. But in fact, Ceefax and Oracle use a very different technology, transmitting the text as part of the usual broadcast signals. Not the same at all!

Socket to me

To use a modem your telephone must have one of those jack plug type sockets (Telecom 600, it's called) the sort that lets you plug in the dreaded answerphone.

This has been a tough assignment.

Find out about Prestel, they said. Find out what's available, whether it's worth the money, and how you plug in an Amstrad PCW to obtain it. 8000 Plus readers are intelligent people, they said – they want to know whether this is really the best thing since sliced bread and pull-down menus, or just an expensive gimmick.

I said I would do what I could.

And so I have. Comfortable evenings slumped beside the television have had to be sacrificed and instead my duty has led me to spend long hours staring at the familiar green PCW screen, occasionally typing in long rows of numbers at the keyboard, while somewhere in the distance a British Telecom computer called Dickens feeds information up my telephone line to me at a thousand or so bits per second. (If you've been trying to telephone me recently and found me engaged, now you know the reason – it was Dickens).

I can assure you that no expense has been spared in my efforts. (Fortunately Prestel only bill quarterly). However, I have definitely emerged from my labours as a wiser person. I now know, for instance, that the population of Altrincham is 38,641, and that market days in Royston are on Wednesdays and Saturdays. I know that 145 McDonald hamburgers are consumed every second of the day (indeed, they provide the main daily meal for 19 million people).

I can tell you the time of the next Polish Airline flight to Prague, and the price of a one-way ticket on the boat from Lerwick to the Faroe Islands.

I have learned from a helpful "electronic healthfood shop" that my family need Vitamin C Plus, Super Vitamin E, Cod Liver Oil, Wheat Germ Oil, Zinc, Iron and Calcium Berries, Trace Element Cocktail and something called Maximune Germanium to help meet their nutritional needs. (The shop helpfully offered to take my electronic order for these items, though just in time I managed to call up another page).

Leisure time

I checked the top ten, played silly games, read crime prevention advice from the Hertfordshire Constabulary. But I also remembered matters spiritual. Prestel, I discovered, has its own God slot ("a quiet space on Prestel with a thought to uplift, interest, comfort or provoke thought") and I can confirm that I was suitably interested and provoked (if not precisely uplifted) to learn that "Today our thoughts are with Saint Denys (or Dionysius), first Bishop of Paris, put to death during the persecution of Valerian."

Finally, I remembered my obligation to assist the 8000 Plus staff at Bath (pop, 79,965; market days, Mon, Wed) in planning their leisure time activities. May I reveal that the Christmas panto at Bath's Theatre Royal this year is Robinson Crusoe, with Leslie Crowther in the leading role.

Which reminds me. I'm currently working on my own play, about a journalist marooned on a desert island with only an Amstrad PCW, a RS232 interface, a modem, suitable software, and a subscription to Prestel to keep him company. Will he ever escape back to real life? (Will he ever pay his Prestel bills?)

Access ability

All right, so you've got the general idea. In among the 257,000 pages of information ('frames') currently available on Prestel is some unbelievable rubbish. Even the potentially useful material can be so well hidden away, at least to the Prestel novice, that it makes it hardly worth trying to find – why bother searching through endless introductory frames when the helpful staff at the local reference library could answer your query straight away?

In fact, it's common to hear the view expressed that BT has blown it – that Prestel, a potentially valuable medium, just hasn't been allowed to develop its potential. BT didn't precisely help matters when it increased its Prestel charges last summer, slapping on a new time charge for evening and Sunday accesses which had previously been free of charge.

Nevertheless, I don't want to be entirely negative. Somebody somewhere undoubtedly finds Prestel worthwhile. British Telecom claim that a total of $7\frac{1}{2}$ million frames are accessed each week (there are 90,000 terminals linked into the service), and some of the specialist facilities have proved very successful. For example, British Telecom Travel Service (BTTS) has been built up, tailored to the needs of the travel business, while CitiService provides a constantly updated link to the world's financial centres for anyone who wants to know minute-by-minute how their investments are progressing. There's also a Farmlink facility for farmers, as well as the home and office banking services which use Prestel, and which were reviewed in the October edition of 8000 Plus.

Information providers

Perhaps it's misleading, therefore, to suggest that Prestel is one unified service – British Telecom themselves describe it as an electronic publishing medium, which can be used for a whole range of functions. In fact, most of information frames which a Prestel user can access are not 'written' by Prestel itself, but by other organisations – the so-called Information Providers (IPs).

Some of the IPs are large organisations who find it worth their while to put key information about their services on to the Prestel database – for example, I was able to consult the British Airways frames, when a friend asked me to check the prices of flights to Hamburg.

But other IPs are independent companies who have become established just to provide a service on Prestel. They make their money either by sub-letting Prestel frames to other organisations (sub-IPs), who may be too small to be able to provide the necessary expertise and equipment to run their own pages, or by charging Prestel users a fee for accessing particular pages. Though most Prestel pages are free, many are not: users will find messages advising them of the cost (from 2p upwards). (All these charges are collected centrally by Prestel, and then distributed to the appropriate IP).

For example, many of the 'leisure' pages on Prestel tempt you into answering quizzes, looking at your horoscope, or checking out latest news or gossip – at a cost. I managed to resist paying 10p to find out if I was sexy. A more honest question for the IP to have asked, I felt, would have been, "Are you gullible, and easily parted from your money? "

Some of the 'harder' information is considerably more expensive: for example, the detailed weather forecasts from the Meteorological Office would set you back 75p. I even came across one competition on the CitiService section of Prestel which appeared to be charging £25 an access – the ultimate way for yuppies to while away a few spare minutes.

Paying for Prestel

Of course, it's not just the user who has to pay for using Prestel. The Information Providers themselves normally have to pay for the privilege of putting up their information. Smaller organisations sub-renting frame space from an IP may also have to pay for frame design and updating services. To give some idea of the costs, one IP is currently offering a ten page block booking at an annual fee of £495, with subsequent pages being charged at at sliding scale beginning at £40 a page.

Whether this is good value depends, presumably, on what you intend to do with your pages. I chose at random one small business, the Leeds based bicycle shop Two Wheels Good, who have four pages on Prestel, and phoned up to ask them whether the investment was worthwhile. Partner Gareth Rainford wasn't very positive. "We have a large mail order business, and it was mainly for mail order

Behind closed doors

Not every page on Prestel is available for public access. There are also areas of Prestel given over to Closed User Groups (CUGs), who have taken over a certain number of pages for private communication purposes. These pages may be confidential to members of a particular company, club or profession – or they may be available to anyone who is prepared to pay an extra subscription.

One of the largest of the CUGs is Micronet, which was set up to offer a Prestel-based club for microcomputer users. Micronet offers, in addition to all Prestel's offerings, its own leisure and business pages (as well as a route into Telecom Gold). Micronet's quarterly subscription is £20 a quarter (including Prestel), though if you pay a year's subscription up-front (£80) they will currently supply a free modem – quite a bargain, if you would otherwise have to pay for the hardware. Micronet's telephone number is 01-837 7872.

Micronet rent pages from Prestel and supply a variety of services

'Amster's Cage' is the section of Micronet for Amstrad users

sales that we decided to experiment with Prestel" he said. "It's cost us about £350 a year, and we had about fifteen enquiries the first month we came on-stream, but that was about it. People are very lucky to track down our pages, and I don't think we'll be carrying on with Prestel".

Because Prestel is based on free market forces, and without any central editing of what is available, there's no guarantee that the organisation whose information you require will have chosen to put in on to the Prestel database. For example, when first using Prestel I set myself as an exercise the task of trying to find out a number of facts or details which I thought a good public library would be able to tell me: among those I failed to find on Prestel were the times of high tides at London Bridge, the date this year of the Diwali festival, and the current range of Amstrad computers.

That's not to say that this information isn't on Prestel somewhere. One of the problems for the newcomer is the time it can take to find the page you want – Prestel pages only have space for 24 rows of information, with 40 characters each row, so the system operates through a series of menus and sub-menus, as you gradually home in on the topic you want. It's possible to jump straight to a frame if you know the right page number to call up, and a system of key words can also work sometimes: for example to check an air-flight, the keyword *AIR TRAVEL# will at least get you to roughly the right subject area.

Another problem is that the routes between pages aren't always well maintained. For example, you may be told to 'key 4 for more information', only to be subsequently faced with an error message. It's sometimes also difficult to extricate yourself from particular sections of Prestel.

Using Prestel, in fact, can be a bit like wandering around a large old-fashioned department store, full of odd corners and annexes, where most of the sales space has been rented out to franchise holders. It's relatively easy to enter each separate trading area, but there's no guarantee once you're in that the exit route will be the same way as you came in. (And of course this particular department store charges you to let you in through the front door, and for each minute you spend browsing).

Technology

The technology which makes Prestel possible was developed during the early seventies, as a spin-off from research work which the Post Office was undertaking to develop a visual phone service, and Prestel was finally launched publicly in 1980. It's now, together with Telecom Gold, a separate division of British Telecom (known as Viewdata UK). Prestel makes use of eight mainframe computers (with names like Kipling, Keats and Austen, as well as Dickens) spread across the country, linked with two London based computers, which provide updating and message holding functions – all the computer centres hold identical copies of the database.

To access Prestel from your Amstrad PCW, you'll first of all need to get 'on-line' – and that means acquiring a modem, RS 232 interface, and adequate software to handle viewdata transmissions. (The first two are advertised variously through 8000 Plus, and the Mini Office suite includes communications software). It's then necessary to subscribe to Prestel – currently £8 a quarter for personal customers, and £18 for businesses. After that, you'll be given a 10 digit ID number and a four-digit password, together with a telephone number which you can use to call up your nearest Prestel computer (local telephone charges apply).

Dickens, or Kipling, or Austen, or whichever computer you get, will transmit electronic data through your phone line to the PCW at the relatively fast speed of 1200 baud, but there's also a facility for you to respond (there has to be, if only so that you can tell the computer your ID and password, and which pages you want to call up), though the response function operates at the much slower speed of 75 baud. To an extent, therefore, Prestel is interactive, and this feature has been developed in a number of ways. Response frames to Information Providers or to Prestel itself are a familiar feature: you can use them for 'teleshopping' (ordering goods, which will then be mailed to you), booking hotels or theatre tickets, or simply requesting brochures or further information. In fact, the facility to obtain holiday brochures is particularly useful, and generally free of charge.

Open the mailbox

You can also send messages to other Prestel subscribers, and receive messages back, using the Mailbox service. This is a very basic electronic mail service, and adequate as far as it goes – it has none of the sophistication of Telecom Gold, but is considerably cheaper. An added refinement is that Prestel subscribers can use their mailboxes to send and receive telexes, through a central Prestel telex facility.

An added technical refinement to Prestel was introduced by British Telecom in 1982, when they added the possibility of 'gateways' being set up between the Prestel computers and other private computers. For example, users of the Bank of Scotland's home banking service HOBS are switched from Prestel through a gateway into the bank's own computer network. Another gateway will take you into British Rail's computer facility, if you want to check train details or fares.

In fact, British Rail offer a considerable amount of useful information for the rail traveller, making this a useful addition to Prestel's range of services. It's rather unfair, therefore, to knock them if they don't always deliver the goods.

Nevertheless, last time I accessed Prestel to enquire whether trains were running normally in my own part of the country, B.R.'s computer flashed up the following message: "Input to this page has been temporarily suspended due to equipment problems". Electronic operating difficulties in the Watford Junction area, no doubt... ■

At what cost

Prestel lost a few friends last July when they unexpectedly bumped up their charges. It now costs 7p per minute to connect to Prestel, with a lower rate of 1p a minute between 6pm and 8am, and on Sundays. You also have to pay your ordinary telephone charges, though almost everyone can connect to Prestel at the local ('L') rate.

The quarterly subscription to Prestel is now £8 for individuals and £18 for businesses. Certain Prestel services attract special tariffs, which Prestel will be happy to reveal to you.

If you have a modem and software, and fancy a peek at Prestel before signing up, it's possible to get access to a small sample database without charge. There are different numbers to dial up, depending on where you are located – to get more information about this, or anything else to do with Prestel, contact them by telephone on 01-822 1122.

Colour bar

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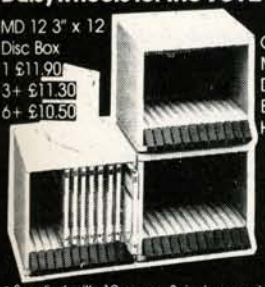

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BOOK LOOK

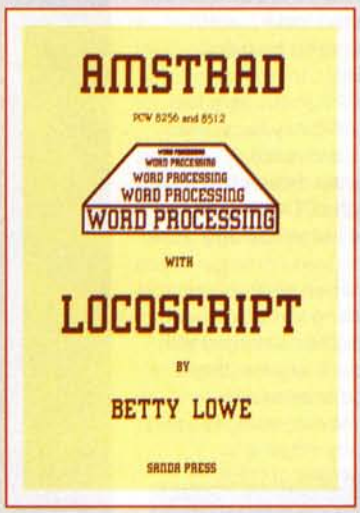
Sharon Bradley looks at books to answer the questions: What is LocoScript? And why bother anyway?

AMSTRAD PCW - WORD PROCESSING WITH LOCOSCRIPT

by Betty Lowe
£5.95 (plus 50p postage)
● Scanda Press (0695 421368)

Word Processing with LocoScript, by Betty Lowe, is a thorough hands-on guide to LocoScript 1. Although more widely distributed in the educational market at present there is no reason why any newcomer to LocoScript shouldn't find the book useful and informative. All the practice that is needed for the user to become comfortably conversant with LocoScript is provided.

It's common for books of this kind to assume no prior word processing experience in the reader. It is unusual, however, to find a first chapter beginning with such fundamental instructions as 'Insert plug in mains socket; SWITCH ON first at socket, etc...' The tone will surely encourage even the most hapless PCW-phobe.



Step assister

The book progresses logically through the program; it begins by explaining to the reader how to create a document, goes on to demonstrate the editing facilities that are available once you have created it and proceeds to show you how to print it out. As well as instructions on how to perform a particular task some units also have a 'What To Do' box which will tell you which steps to take should anything unexpected happen; ('If your exercise appears to have gone disastrously wrong, or you wish to try it again, press EXIT and select ABANDON EDIT ...')

The emphasis is on the program's various practical applications, which, let's face it, is why most of us would be using it anyway. Ample time is also devoted to all of LocoScript's layout tricks and display features.

Unit 13 acts as a kind of halfway house and is appropriately entitled Consolidation. It gives you the opportunity of checking up on your own progress by practising an exercise which incorporates most of the features covered.

The strength of this particular guide lies in its determination to explore all of LocoScript's avenues instead of just sticking to the already well-trammelled guide lines. So often, even the most hardened LocoScript users will stick to a particular method of doing something either because they're unaware that there's a faster way of doing it, or because they haven't the time to learn it. Lowe, on the other hand, has opened her audience's eyes to all of these possibilities right from the word go. ■

AMSTRAD PCW 8256 and 8512 – WORD PROCESSING WITH LOCOSCRIPT
(ISBN 094896717X)
8000 PLUS VALUE VERDICT 5/5

COMPUTERS – WHO NEEDS THEM?

by D Charlton, S Kosminsky and M Lunnon
£5.00 (inc. p&p) ● London Voluntary Service Council (01-338 0241)

This new book has been written to help anyone needing to make decisions about introducing and implementing new technology into their working environment. Although written primarily for the voluntary sector there is much in it of interest to the small business, to new users who still have a host of unanswered questions and to the complete novice who has either no expectations at all or wildly inaccurate ones.

Much has been written about microcomputer systems; what this book sets out to do is translate some of the technical jargon so often aimed at business users into clearly comprehensible terms, and generally decode some of the industry specific terms that inevitably surround specialist subjects.

The book is very much needs- and means-oriented in that it will help you make the right choices as far as hardware and software are concerned on the basis of first, the uses to which you would put the system, once installed, and second, the funds available to you at the time of purchase.

To make an informed decision it's usually a good idea to know what is available. The book's ten chapters explore in detail the differences between certain systems and how size, capacity and speed relate to the uses you might have for a computer.

Chapter 1 explains exactly what a micro-computer system consists of while Chapters 2, 3, and 4 concentrate on the three most likely tasks to which business people would put their system: word processing, data processing and financial planning. It's all about analysing the work that your particular organisation does and working out how computerisation can be used to improve profitability.

To finish off, the book will remind you of a few practical pointers to be considered once the system has safely been installed: software security and data protection for example.

Computers – Who Needs Them? is a very comprehensive look at the *process* of computerisation. It will be a vital read for anyone thinking of taking the considerable and costly plunge into office automation, whatever the machine. ■

COMPUTERS – WHO NEEDS THEM?
8000 PLUS VALUE VERDICT 4/5

LOCO 2 vs

Looking for a cheap upgrade to LocoScript 1? Rob Ainsley investigates...

If you're suffering the equivalent of motorway hypnosis watching LocoScript 1 scrolling endlessly on, you'll want to get something a bit faster. If you're budget conscious but want quality there are only two real choices for your step up: LocoScript 2, or Mini Office, the five-program suite which includes a word processor. You can get both for £20 or so... but which is best for you?

Heavy words

Serious writers should splash out on Protext (£59.95) or its cut-down cousin, Pocket Protext (£39.95) – which lacks only the mailmerge facility. It's a fast, flexible, powerful word processor with a bag of features like simultaneous two file editing, lightning word counter, zippy fast block handling, near instant find and exchange, etc. etc... Like Mini Office it's command rather than menu driven, so takes time to get to know. If you word process with large documents it will revolutionise your working habits.

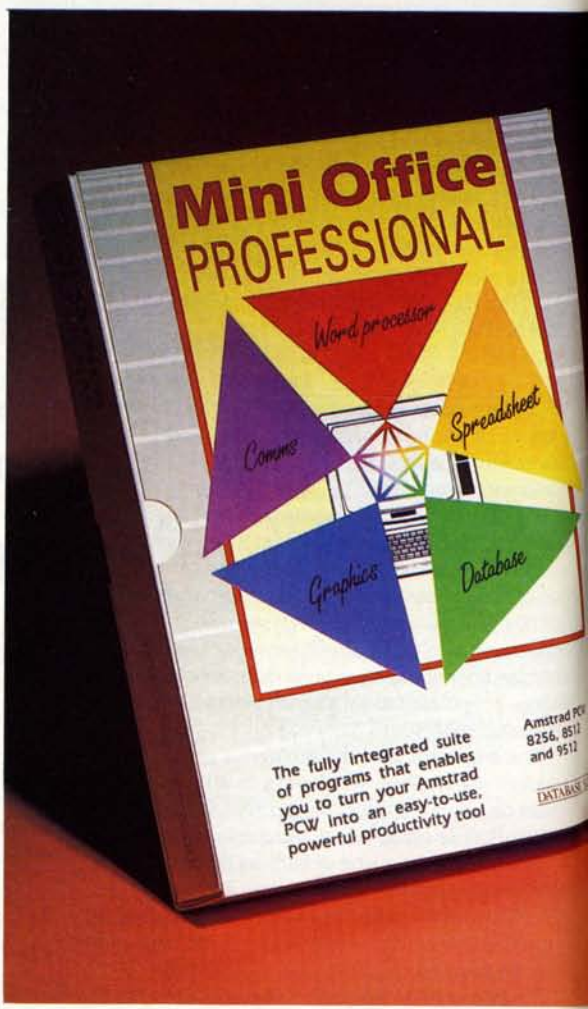
LocoScript 1 is a good word processor, but there are some disadvantages. The procedure to change a layout in the middle of a document is obscure to say the least and it's painfully slow at times.

Assuming you've only got twenty quid or so to spend, the choice of upgrade has to be LocoScript 2 or Mini Office's word processor. With Mini Office you also get a database, a spreadsheet, a communications package and a graphics utility thrown in; and you can use data from the database in the word processor – which is fast, has an instant word counter, and has a bagful of features ranging from the mindbogglingly useful to the slightly silly.

LocoScript 2, on the other hand, offers reasonably fast movement around your document (significantly faster than version 1) but the handling of blocks of text is still cumbersome and there is no word counter. However it can print virtually any language directly on the PCW printer, normal text on virtually any printer, and is considerably more robust and reliable than Mini Office.

Which you would find useful depends on what you want to do with your word processor. For getting text quickly onto disc, Mini Office wins hands down. If you're concerned with 'bulk text' writing a lot of the time – theses, articles, books, sermons, business reports – Mini Office's speed will astonish you, and its word counter works something like 600 times faster than LocoSpell's! Particularly irritating to longtime users of LocoScript is the slowness of block movements: to shift those hundred words of intro from the beginning to the end, you have to mark out a block in reverse video, watch it wind its way off the screen, jump to the end, and paste in the block you just marked out. Mini Office is much, much faster.

There are snappy features enabling you to delete words, lines, parts of lines and blocks of text at a stroke. Mini Office automatically formats text for you as you go, like LocoScript, so you don't have to worry about mucking up the layout by adding a word here or there, but it does it much faster.



Out of print?

On the other hand, once you've got the text on disc, LocoScript is much better for doing anything sensible with it. Mini Office's early bugs which preventing printing out text acceptably have been fixed (in the latest version, 1.07) – well, until someone finds another one, of course (the latest version is bug free but don't try pressing [EXCH] when you want to exchange something in a document!). LocoScript 2 still gives you more flexibility on your printout than any word processing package in the world at the price. Daisywheel or dot matrix, 24 pin printers, foreign languages, accents, mathematical symbols, a variety of styles to print out in... Mini Office has a strange way of printing out justified text, going back after each word and overprinting for NLQ; if you

LocoScript 2 features a quicker way to change a layout than Loco 1

Amazing but true

Simple arithmetic shows that while LocoScript 1 found a word at the end of a 110k document using [FIND], the average flat in the centre of Bath went up 75p.

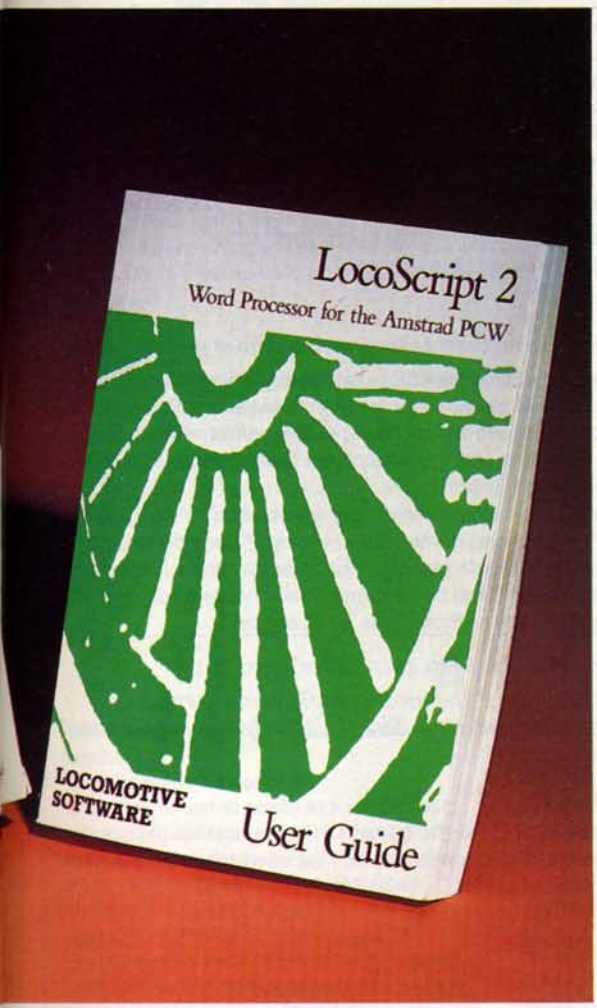
MINI OFFICE

regularly work with both margins justified, LocoScript 2 is over twice as fast at printing out.

If your main text output consists of letters, agendas or reports, the speed gains of Mini Office don't really matter, and the ability of Loco 2 to produce very good printed results in a variety of styles is very nice. If you want to do anything which involves foreign languages or scientific symbols then you have no choice: it's Loco 2.

There's also the question of approach. LocoScript 2 uses the same comfortable menu system as Loco 1. A few of the procedures have been altered, notably the method of changing to a new layout in the middle of a document. The setup of headers and footers is now immeasurably simpler than the involved sequences they required in version 1. All in all the menu system is very easy to follow, and even if you don't have the manual handy most of the time you can still get where you want to go by following your nose through the menus.

As in version 1 you can select any item from any menu by pressing the letters capitalised in the menu – eg. pressing [+]I immediately selects 'italic', or you can press [+], wait for the menu to appear, move the cursor down over Italic and press [ENTER] for the same effect.



Menu at work

Mini Office is command driven though does have some menus. Most of the 'LocoScript' keys work – [DOC] moves you to the end of a document, [PARA] to the end of a paragraph and so on. However you still need to memorise keystrokes like [SHIFT][ALT]H to start a header or [ALT]> to make text right-justified.

Layouts in Mini Office are accomplished by means of ruler lines which define the position of the margins and tabs from that point on, unlike LocoScript where you set up margins and tabs in a separate procedure and can also specify justification, pitch size and the colour of the new kitchen sink.

If you use your PCW for sending Christmas cards or letters to club members, customers or whatever you can use Mini Office's database to store names and addresses and churn out letters automatically to each person on the list – 'mailmerge' as the technically inclined would say. You can do the same in LocoScript but you must have LocoMail which is available separately and therefore has to be paid for separately.

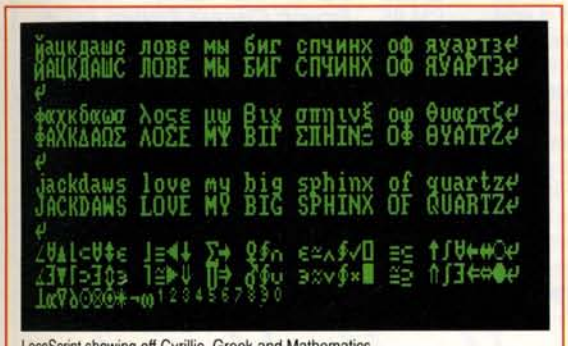
Although Mini Office comes as a suite, the programs don't really integrate that much. You can't use any data from the spreadsheet or the graphics package in the word processor, for example, nor vice versa. You can't export data

Zealous converts

To convert LocoScript documents into Mini Office you can just make an ASCII file ('simple text') and load it in Mini Office. Bold and italic commands and layouts are lost or ignored. Conversely, you can use Mini Office documents directly in LocoScript by inserting them into a Loco document using 'Insert text'. Of course all the tabs, bold and italic commands, layouts and so on get lost.

Mini Office's word counter

Layouts in Mini Office are done by ruler lines


LocoScript showing off Cyrillic, Greek and Mathematics

Mini Office lets you see exactly how the printer will print out your text in the different styles and sizes

New PCW software from ARNOR

Word Processing

PROTEXT FILER - New Release! £24.95

This invaluable program will keep your address lists or other datafiles in good order. Includes: datafile management from within Protext; extremely flexible file sorting program; label printing and mailmerging using the datafiles. Send SAE for full details.

PROTEXT OFFICE - New Release! £34.95

Invoice printing program as used by Arnor. Easily configurable for your own requirements. Works from within Protext. Produces invoices/credit notes/delivery notes/statements. Includes Protext Filer. Send SAE for full details.

PROTEXT Word Processor £59.95

Protext is now firmly established as the alternative to Locoscript.

All the features you would expect from a good word processor - many text editing commands, print commands, spell checking and mail-merging. The refinement and thought that has been put into the program - logical keystrokes and commands, clear layout, speed and power ... all go towards making Protext ideal for the novice or the experienced user.

* On-screen help * Typewriter mode * Insert or overwrite typing mode *
* Word count * Undelete feature * Move/copy/delete/print blocks of text
* Box manipulation * Configuration * Personal dictionaries *
* Exec files * Two file editing * Keyboard macros * File conversion *
* Comprehensive Find & Replace * Foreign languages and accents *
* Program editing mode * Proportional printing, right justified *
* Conditional printing and loop constructs * Print any number of copies
* Works with any printer * Calculator * Print labels *
* Use the maths/string functions to produce personalised invoices etc *

New version 2.2

* Compatible with PCW 9512 * Enhanced spelling checker - larger dictionaries, dictionary on drive M or on program disc *
* Many improvements based on customer feedback *
(Upgrade from earlier versions £20.00, please return original disc)

"Protext deserves to be the system by which all other word processors are judged ... a superb product." YOUR COMPUTER

"The great strength of this package is its ease of use" CWTA

"Protext is the solution to all Locoscript's drawbacks" PCW

"Makes Locoscript look like a snail" 8000 PLUS

"Simply the best word processing program to date for the PCW ... Locoscript is effectively dead" PUTTING YOUR AMSTRAD TO WORK

PROSPELL Spelling Checker £29.95

Typing and spelling errors are simple to make and frustrating to miss. But by using Prospell, you can produce documents that are error-free. Prospell is an automatic spelling checker that points out any odd words or dubious spellings.

* Works with Locoscript 1 and 2, WordStar or any ASCII file *
* 33000 words * room for thousands more * up to 2000 words/min *
* Find words and anagrams - ideal for crosswords *

New version 4.1

* Compatible with PCW 9512 * Dictionary on any disc/drive incl. M *
(Upgrade from earlier versions £15.00, please return original disc)

"Anyone looking for a spelling checker need look no further" AU

POCKET PROTEXT new low price! £29.95

Budget price version of Protext without spelling checker, mail merge and box mode. Now compatible with PCW9512.

"Just as powerful as the full Protext and at a very attractive price" 8000 PLUS

CP/M Programming

BCPL new low price! £24.95

Flexible, fast, general purpose programming language. Extensive set of I/O libraries including access to CP/M routines. Example source files supplied, including full screen editor and all the libraries. 60 page manual covers the language and gives details of the libraries.

"Easy to use, yet both flexible and powerful" CWTA

"Arnor's clear, concise manual will have you programming confidently very rapidly" AMSTRAD ACTION

C £49.95

Complete C development system now available at new low price

- Optimising compiler - Full implementation of K&R standard -
- Floating point arithmetic - 32 and 16 bit integer arithmetic -
- I/O and maths libraries - Conditional compilation - File inclusion -
- Macros - Linker accepts C and assembler (with Maxam II)
- Stand alone generator produces COM files
* Protext compatible editor: * - Fast and easy to use - Two file editing -
- On screen help - Fully configurable - Powerful find and replace -
- Keyboard macros - Exec files - Compile directly from editor -

"Streets ahead in terms of programming power" AMSTRAD ACTION

"In typical Arnor fashion, they've taken their time and got it right" AMSTRAD COMPUTER USER

MAXAM II £49.95

Complete CP/M machine code development system at new low price

* Macro assembler * nested conditional assembly * file inclusion *
* textual substitution of macro parameters * repeat loops *
* Full expression evaluation * Error listing to screen/file/printer *
* 8080 mode * Linking facility * Create object files for use with C *
Window based monitor, with:
* line assembler * disassembler * memory editor * find string * relocate
* move memory * compare memory * fill memory * bank switching *
* symbolic debugger * single stepping * set memory limits for stepping
* stack checking * conditional breakpoints * trace mode * edit registers
* Editor is program mode of Protext (as for C, above) *

"Maxam II - now the best gets even better" CWTA CPC

"Maxam II is stunning ... the most complete and competent programming package around. Simple, speedy and sophisticated AMSTRAD ACTION

Special Offer:

Buy one of Maxam II or C for £49.95, and the other can be yours for jus £20. Remember that Maxam II and C can be used together to produce hybrid C/assembler programs.

SUMMARY OF PRICES:			
Protext	£59.95	Maxam II	£49.95
Pocket Protext	£29.95	C	£49.95
Protext Filer	£24.95	Maxam II and C	£69.95
Protext Office	£34.95	BCPL	£24.95
Protext Tutorial disc	£5.00	Prowort (German Protext)	£59.95
Prospell	£29.95	Protext (Atari ST)	£79.95
		Protext (IBM PC compatibles)	£59.95

All programs work on Amstrad PCW8256/8512, PCW9512, CPC6128
Orders normally despatched on the same day they are received.
Please mention this magazine when ordering.

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from the word processor to the database either, though you can use data from the database. The mail merge facility this gives you is fairly simple – a fill-in-the-blanks function of the 'Dear (name), How are things in (town)' type. No calculations or loops or conditional testing as you get in LocoMail.

In fact, LocoScript 2 is a real gateway to a 'LocoScript family'. LocoFile, the database add-on, only works with LocoScript 2 in common with most of the new products from Locomotive. It's a simple and straightforward card-index type of database but works completely from within LocoScript – you can use it while you're editing a document, look up an address, copy and paste it into the document and so on. LocoFile and LocoMail files are interchangeable giving you genuine compatibility between the word processor, the mail merger and the database. Then of course you've got your extra font programs, character redefining programs and so on, all of which are compatible with LocoScript 2 and its add-ons.

The old question of manuals may come into it too. LocoScript 2 comes with a comprehensive, well-written and clear manual far above the usual standards of software documentation. Mini Office's manual is something of a *cause célèbre* and isn't really much more than a list of commands.

Both programs have their fanatical devotees, and both are good at what they do. In the end, it really boils down to screen vs. output, and familiarity vs. unfamiliarity. It's impossible to generalise and say who would do better with one or the other – the specific need will probably make the decision for you.

Marking time

These figures should give you some idea of the relative speeds of LocoScript 2 and Mini Office for everyday tasks. LocoScript lets you work in either the M (memory) or A (or B) drives, the memory drive being faster of course, so timings are given for both. Mini Office always works on your document in memory but stores it on the A (or B) drive so one figure only is given. The timings are all for the same 5000 word document with no headers, footers or changes of layout.

9512 owners read this

As you already have LocoScript 2, is it worth changing to a new system? The answer may well be no. After all, your system is pretty complete with LocoSpell and LocoMail; Mini Office has no spell checker and a rather less powerful mail merge facility. The fact that it can display italics, condensed print, bold etc. on screen is great but irrelevant if you don't have a dot matrix printer to print them!

Mini Office doesn't work with Greek or other foreign daisywheels, of course: foreign languages are definitely one of LocoScript's really strong points.

However, you may find Mini Office indispensable for some specific purposes. Its speed and word counter make it very useful for writers and report writers who tend to deal in bulk text to fixed lengths, especially if you cut, copy or move blocks of text around a lot.

Mini Office boasts the facility to stop the printer anywhere, including the middle of a line, which means you can change the daisywheel easily for one word or phrase, to print a different pitch for super- or subscripts.

	Mini Office	LocoScript 2	
	A drive	A drive	M drive
Size of 5000 word document	30k	32k	32k
Jump from beginning to end using [DOC]	1s	45s 6s	30s (max) 6s (min)*
[FIND] word at end	22s	1m45s	1m35s
Replace all occurrences of (full stop)(blank)(blank) by (full stop)(blank)	53s	3m35s	2m8s
Move 100 word block from top to bottom of document	1s	6s	6s**
Count words in document	1s	8m35s	8m30s***
Print one page of double-spaced A4 in justified NLQ	7m3s	2m56s	

*Time taken varies depending on the amount of changes made since last jump to end. Times based on ten trials
**Includes time to mark out, cut and paste block, but *not* time to jump to the end of the document using [DOC]
***Using LocoSpell with no user dictionary and all words correctly spelled. ■

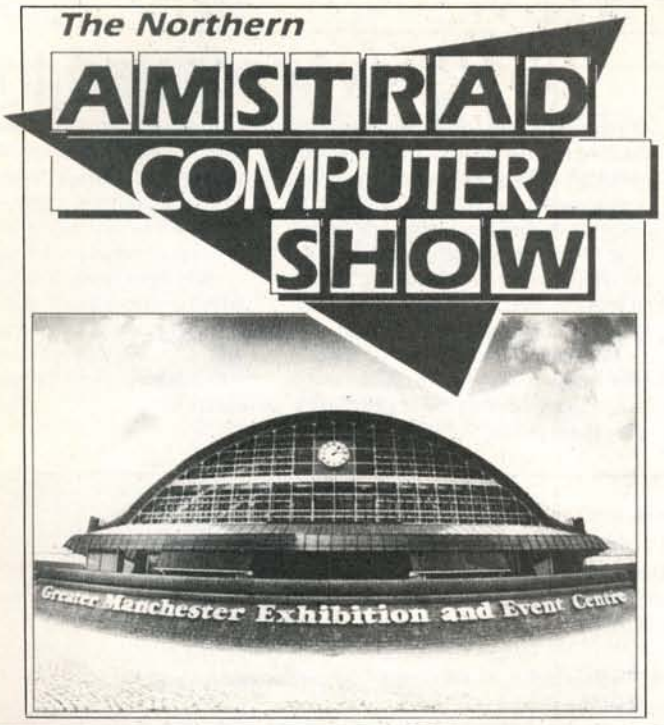
Anything you can do...

Here are the things Mini Office can do which LocoScript can't:
***Count the words in a document**
***Display text on screen exactly as it will print out, including bold, italic and underline effects, pitch sizes, justification, double height/width characters and reversed out (black-on-green) characters**
***Send codes to the printer, enabling you to eg. print graphics or backspace**
***Select 'overwrite' mode (in this mode if you put the cursor over the first letter of CATFISH and type DOG you end up with DOGFISH; in the normal 'insert' mode you'd get DOGCATFISH).**
***Delete whole lines or parts of lines with one keystroke**
***Search for and replace control codes (eg. replace all italic commands with underline commands)**
***Display the text as double width for easy reading**
***Have unlimited numbers of headers and footers (text that goes at the top or bottom of every page, such as page numbers and chapter titles)**
***Display page numbers in Roman numerals (for introductions) or 'decimal' (1.0, 1.1, 1.2, ... 1.10, 1.11, 1.12 ... 2.1, 2.2 ... etc.)**
***Swop letters from upper case to lower and vice versa – surprisingly useful when you've typed a heading 'In the event of fire' and realise it would be better as 'IN THE EVENT OF FIRE'.**
***Print a document to screen so you can check the layouts, page numbers and so on before committing it to paper.**

And here are the things LocoScript 2 can do that Mini Office and LocoScript 1 can't:
***Print two styles (normal or sans serif)**
***Copy and format discs**
***Work directly with any printer in the world (you may have to buy a 'printer driver' from Locomotive to do this for a few pounds)**
***Print out on screen and the PCW 8000 series printer any character from Greek and Cyrillic, and almost all mathematical and scientific symbols needed for university and research work**
***Work with newer products from Locomotive such as**
– 'printer drivers' enabling you to use 24 pin printers for fast extra quality printout;
– LocoFile, the database that works from inside LocoScript which can be called up while editing a document eg. to look up and copy into the document an address;
– LocoChar, which lets you redefine up to sixteen characters of the LocoScript character set to your own design and include them in documents in bold, italic etc as normal;
– LocoKey, which lets you assign any letter or combination of letter and accent to any key on the keyboard;
– LocoFont, a set of extra print styles to make your printer print out a handwritten script, Old English, etc. etc.

Like LocoScript 1, but unlike Mini Office, Loco 2:
***Does decimal, right and centre tabs**
***Works with a spell checker (LocoSpell) in most European languages (except Welsh).**
***Works with a sophisticated mail merger (LocoMail)**
***Can print letters proportionally spaced (so that i takes up less space than m for example to give smoother looking printout)**
***Can store phrases**

All the products prefixed 'Loco-' are widely available from mail order stockists, or from Locomotive Software on 0306 740606. Prices are all between £15 and £30.



NORTHERN LIGHTS

Amstrad shows North of Watford? Steve Patient gets on his yak to investigate

Rarely a week goes by without a complaint in the computer press from irate enthusiasts irritated by the lack of computer shows in Caithness, Cornwall or Caernarvon, to mention only a few. But there are some shows outside London. Every now and then there is a show which isn't staged by Personal Computer World at Earls Court. Usually devoted either to Amstrad or Atari they can appear in very remote places – Paris, Hanover... even Manchester

For anyone used to the really big shows the first problem was finding the G-MEX exhibition centre. There were no directions to it anywhere. It used to be a train station but now even the buses don't appear to go there; it's a forty minutes journey by bus and on foot from Manchester Picadilly.

The first thing that struck you was just how clean everything looked; then the quietness. Plenty of people around but no speakers blasting out megawatts of Star Wars music to attract hard of hearing games players. Perhaps this show had been put on for serious computer users?

PCW presence was strong – about a third of the stands had one displaying software or actually in working use somewhere and Amstrad continue to promote the series. 8256s were out in force too, so there's no reason to suppose that the 9512s will be taking over as the 'standard' PCW just yet.

Show and tell

There were about sixty stands to see with Amstrad's own being the biggest and directly opposite the entrance. Behind them Locomotive occupied one only marginally smaller. Apparently advance orders for LocoFile (reviewed in 8000 Plus last month) were filling boxes. There are no plans yet for a spreadsheet to go with LocoScript.

There were the usual show stands offering bargain basement prices on any kind of hardware and software; three inch discs were on sale at under two pounds, and most prices were easily comparable to those available at larger shows. If you were looking to spend money and knew what you wanted you'd have found it there. The range was such that you could have bought your computer, software, peripherals, consumables, training and even your office furniture at the show.

Oddly enough the busiest stand looked to be Computer Books, who do not discount, once again demonstrating that the more powerful your computer the more information you need to use it to the full.

Since this was an Amstrad show their full range of machines were on display (with one exception). Two demonstration areas had been set aside, one for games running on the Sinclair PC200 home machine and the other in the imaginatively named Amstrad Street showing mock ups of office enviroments. The PC200 was certainly causing a lot of interest, being a 'games machine with the advantages of PC compatibility' etc., but there were still many mutterings about how its limited graphics output (CGA, limited resolution, only four colours) made it not much better than a £100 Spectrum as a games machine. General opinion was that it would sell, but would not enhance Amstrad's reputation.

The Amstrad Theatre was the biggest single exhibit. There were continuous presentations on offer of Locomotive software, PC200 introductions as well as question and answer sessions with an expert (actually the editors of certain other PCW magazines!)

Amstrad's new 2000 range, the 2086, 2286 and 2386 were being advertised but Amstrad said that only four 2286 and four 2386 machines exist in complete working order in all the world. G-MEX boasted one of the 2386 machines, the most powerful of the range but none of the 2286. They were too busy rehearsing at Brentwood to attend.

Bring on the dancing girls

Piccadilly Radio had a stand there with nothing on display but a small pile of stickers and two gaily clad ladies who urged you to dance. After four hours on the train walking seemed hard enough. Other stands not actually selling anything included the Amstrad Advice Centre boasting three serious suits who knew their stuff.

Indeed, actually talking to the exhibitors was one of the high points; at the bigger shows it just isn't possible. Even in the restaurant you could find a seat and prices there were merely high and not actually extortionate.

Bath Computer Shack said that the show remained busy right through the weekend though from the exhibitors point of view business was slow. Most of the visitors were taking advantage of the advice and presentations on offer but few were buying, they said. This is a pity as the whole point of the exercise is for it to be a marketplace. If there aren't enough sales there may not be a show next year, and it is computer users who will suffer if there aren't any shows to visit.

At £5 to get in the show was expensive. Yet plenty forked out for a seat. To meet the cast and speak with the names behind the advertisements it was worth it, but without sales it won't run and run. From the exhibitors point of view it would appear not to be a runaway success. Maybe we'll make it to Paris next year? ■

MASTERFILE 8000

FOR ALL AMSTRAD PCW COMPUTERS

MASTERFILE 8000, the subject of so many enquiries, is now available.

MASTERFILE 8000 is a totally new database product. While drawing on the best features of the CPC versions, it has been designed specifically for the PCW range. The resulting combination of control and power is a delight to use.

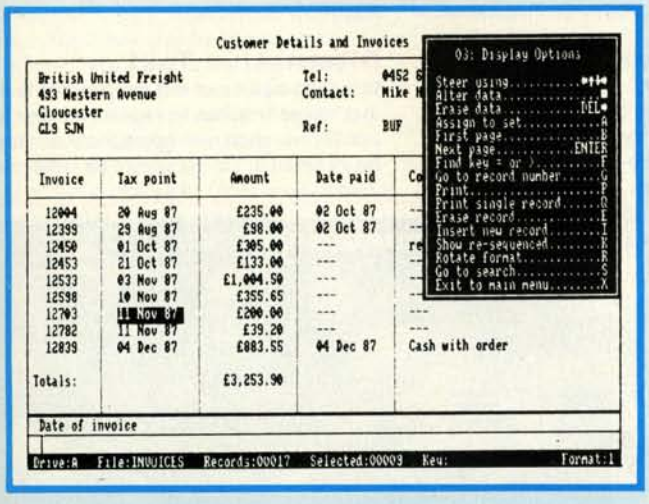
Other products offer a choice between fast but limited-capacity RAM files, and large-capacity but cumbersome fixed-length, direct-access disc files. **MASTERFILE 8000** and the PCW RAM disc combine to offer high capacity with fast access to variable-length data. File capacity is limited only by the size of your RAM disc.

A MASTERFILE hallmark is the provision of multiple, user-designed display formats. This flexibility remains, but now it's even easier. With **MASTERFILE 8000** you design your formats "live"; no more questionnaires, just move your format effects around the screen using the cursor keys!

Record updating is even easier than before — just steer your cursor to any field on the screen and then insert/erase/alter as required.

Special options are provided for handling dates and surnames, and column totals can be generated.

All screen work is done graphically — and hence we offer unique panel, box, and ruled line options. Choose the line spacing at pixel resolution — you will be amazed how much clearer 9-pixel lines are than the usual 8-pixels. (Study the picture.) And all this faster than CP/M normally lets you paint the screen! PCW printer functions, under menu control, are provided.

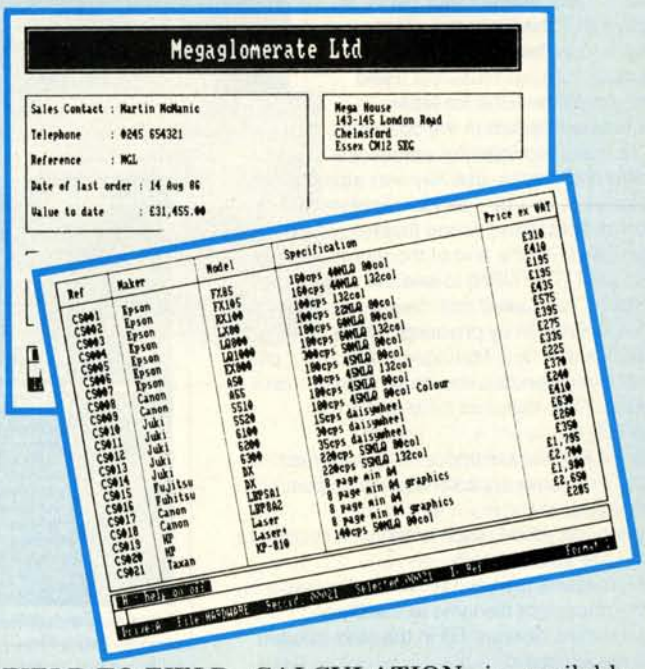


Keyed files are maintained automatically in key sequence, with never any need to sort. You can have unkeyed files too, where records can be inserted at any point in the file.

Any file can make RELATIONAL references to up to EIGHT read-only keyed files, the linkage being effected purely by the use of matching file and data names.

You can import/merge ASCII files (e.g. from MASTERFILE III), or export any data (e.g. to a word-processor), and merge files. For keyed files this is a true merge, not just an append operation. By virtue of export and re-import you can make a copy of a file in another key sequence. New data fields can be added at any time.

File searches combine flexibility with speed. (**MASTERFILE 8000** usually waits for you, not the other way around.) You can even assign subsets of a file into one or more of seven pigeon-holes for subsequent reference or further manipulation.



FIELD-TO-FIELD CALCULATION is available, using any mixture of terms and arithmetic operators + — * / ( ).

MASTERFILE 8000 is totally menu-driven, fully machine-coded, and comes with example files and a detailed manual. We claim (modestly) that you will not find another filing system with such power, flexibility, and friendliness.

MASTERFILE 8000 costs **£49.95** including VAT and P&P to anywhere in Europe. Elsewhere please add 20% for air-mail service. ACCESS/VISA/MASTERCARD orders are welcome, written or telephoned, quoting card expiry date. Make cheques payable to "Campbell Systems".

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LocoMail

LocoMail is an extremely powerful and often complicated program to use if you want to get the most out of it. This wallchart will hopefully serve as a quick and easy point of reference when it comes to using those routines which have

Basic Filling and Merging

1) Merging involves creating both a standard document and a datafile. Typically your standard document is a letter with slots like 'Dear (name), You have been chosen out of all the people in (town) to take part...' and the datafile is a name-and-address list. On merging, the standard letter will take each name and address in turn from the datafile and make up a letter for each one filling the slots appropriately.

At the Disc Management Screen, press C. Create the document, placing all the slots (which, on merging, will contain the data in the datafile) within the (+Mail) and (-Mail) codes.

2) The first page in your datafile consists of exactly the same fields (items of info) as there are in the standard document, separated by something eg. [RETURN]. If the letter is 'Dear (name) Your family at (address)...' the first page of the datafile must be something like `name[RETURN]address` etc. Field names must be letter for letter identical to the slots in the document.

To make provision for addresses of different lengths, use any non-alphanumeric character (# or ; or : etc) to separate the Address field from the one that follows (see screenshot). At the end of the record pattern, press [ALT][RETURN] to end the page there.

3) Having completed both files, press [EXIT] and select Finish edit by pressing [ENTER].

4) Back at the Disc Management Screen, place cursor over standard document filename and press M. Then select datafile and press [ENTER].

When in Manual (as opposed to Automatic) mode, this menu appears after each 'pass' (ie. each letter).

In Automatic mode, each letter goes straight to the printer automatically.

Filling involves pressing [F] when the cursor is on the document filename at the Disc Management Screen. Fill in the slots straight from the keyboard.

Typical standard document with LocoMail slots

Typical name and address datafile with record pattern

Conditional Merging

(Only printing letters if certain things about the recipient are true – eg. threatening letters only to debtors)

1) Insert a LocoMail condition at the top of the standard document. On the basis of information read from the datafile (which determines if the condition is being met or not), decide to omit that letter.

A typical LocoMail condition: `(+Mail)# Maintenance Contract = "Yes":<:*:> (-Mail)` means if the information stored in the datafile under the field name of 'Maintenance Contract' is 'Yes', do not print a letter.

means 'if' and * means 'omit this letter'. All character strings need quotation marks.

2) Testing for a false condition involves inserting NOT immediately after the hash sign. The following condition must be enclosed within brackets: `(+Mail)# NOT (Maintenance Contract = "Yes"):<:*:>(-Mail)`

3) Inserting AND means that the consequence will only take place if both (or more) conditions are met.

4) Including OR means that nothing will happen unless one or other of the conditions is met. A combination of NOT and AND ensures that two conditions are met one of which is false, while NOT and OR means that only one condition out of two must be met, one of which is false.

Numerical Conditions

If a datafile contains details of customers' bank balances (or other numerical data), the following signs make for greater flexibility when setting up conditional statements:

`# Balance = 0 ....` means 'if the balance is equal to zero'.

`# Balance <> 0 ....` means 'if the balance is not equal to zero'.

`# Balance <[or>] 0 ....` means 'if the balance is less [or more] than zero'.

`# Balance >= 0 ...` means 'if the balance is equal to or greater than zero'.

`# 100<Balance>200 ...` means 'if the balance lies between 100 and 200'.

Conditions using information entered from the keyboard

At the top of the standard letter, but beneath the recipient's name and address, type in

`(+Mail)Response=?; do you want to abandon this document(-Mail) (+Mail)#Response = "y*":<:*:>(-Mail)`

As when using Fill mode, the program pauses so that the response can be typed in. Type in 'y' and the program goes onto the next letter; type in anything else and it will carry on with the merge for that letter.

Alternative Text

Including a piece of text not relevant to all letters in a merge requires typing in a number of conditions, each with appropriate sentences to be included in the document for when one of the

Merge completed

Letter incorporating typical LocoMail condition

Wallchart

temporarily slipped your mind. It covers all the most commonly used utilities, but isn't a tutorial in successful LocoMail practice; you'll need to reread our series (or even consult the manual) for a more detailed approach.

conditions is met. The commands are typed into the document where the text in question will eventually appear.
When LocoMail finds the condition that matches the information typed in the datafile, it will automatically insert the appropriate sentence and leave out the others.

Joining together separate fields

1) If a datafile contains separate fields for Title Forename and Surname, insert the command `(+Mail)Fullname = Title & " " & Forename & " " & Surname:Fullname(-Mail)` at the point in the standard letter where you would like the recipient's full name entered. The ampersand joins together the three different variables, while the space (inside the quotation marks) ensures that a space is left between them on merging. The colon-plus-fullname bit then inserts the new full name into the document.
2) To add up a series of numbers (like prices), the details of which are stored in a datafile, insert a command like the following at the appropriate point in the text:
`(+Mail)Total="£"&[Cost1+Cost2+Cost3]:total(-Mail)`
Square brackets tell the program to do the addition first. LocoMail observes the usual order of calculation: multiplication and division are carried out first, followed by addition and subtraction. If you need to add two values together and multiply the result insert another set of square brackets to establish the order:
`(+Mail)Total=[[Cost1+Cost2]*0.15]:total(-Mail)`
* is the multiplication sign; / is acknowledged to be the division sign. The ampersand joins the pound sign to the resulting addition on merging although it's often easier to insert the currency symbol into the document just before the first (+Mail) code of the LocoMail instruction:
`£(+Mail)Total=[Cost1+Cost2]:total(-Mail)`

Calculating VAT

1) Multiply the total by 0.15 to get the VAT figure: `(+Mail)VAT=[Total * 0.15]:VAT(-Mail)`
2) Add that figure to the total amount owed:
`(+Mail)Sum=[Total+VAT]:sum(-Mail)`
3) To extract the VAT from a VAT-inclusive figure multiply by 3/23:
`(+Mail)VAT=[Price*3/23]:VAT(-Mail`
4) To extract the VAT-exclusive price from a VAT-inclusive figure multiply by 20/23:
`(+Mail)ExVAT=[IncVAT*20/23]:ExVAT(-Mail)`
In each case the `:VAT` and similar bits insert the value into the document.

```
(+Mail)Customer_Name(-Mail)↵
(+Mail)Customer_Address(-Mail)↵
↵
↵
We are currently introducing a system of maintenance contracts for each of
the PCW series machines and as one of our most long-standing clients we are
offering you the opportunity to begin one now.↵
↵
The maintenance contract will last one year, during which time, should ↵
anything go wrong with your machine, it will receive prompt attention at
very advantageous repair costs. ↵
↵
(+Mail)"Computer_Owned="PCW8256 ?((-Mail)A full year's maintenance contract for
the PCW8256 costs £36.00. (+Mail)"Computer_Owned="PCW8512 ?((-Mail)A full year's
maintenance contract for the PCW8512 costs
£48.00.(+Mail)"Computer_Owned="PCW9512 ?((-Mail)A full year's maintenance contra
the PCW9512 costs £59.00.(+Mail)"(-Mail)↵
↵
We look forward to hearing from you.↵
```

Letter with alternative sentences for inclusion

Setting Decimal Tabs

To make sure prices align vertically you can [TAB] before them with the tab at that point set to a decimal tab.
1) Press f2 Layout menu and select Change Layout.
2) Move cursor to the place on the ruler line where you want to set the tab.
3) Press [+] key four times until a dot appears.
4) Press [EXIT][ENTER] twice to get back into Edit and press [TAB] before typing in the value.

Altering Default Values

1) Type a vertical bar ([ENTER] and [<] keys simultaneously) in between the arithmetical expression and the closing square bracket.
2) To truncate the calculation to 2 decimal places, type '2!' after the bar: `(+Mail)VAT=[Total * 0.15 | 2!]:VAT(-Mail)` – type nothing for a rounded calculation.
3) Inserting / between the vertical bar and the decimal format number causes six hundred million to be written as 600,000,000. A \ causes it to be written as 600 000 000.

Loops

1) For the purposes of invoicing, to repeat the insertion of a value until a zero amount is entered, type in
`(+Mail)Loop="`
`(+Mail)Amount=?#;type in amount(-Mail)`
`(+Mail)Amount(-Mail)"(-Mail)` [note the decimal tab]
`(+Mail)%Loop@Amount(-Mail)`
%Loop means 'repeat the loop in question' and @Amount means 'until a zero amount is entered'.
2) To automatically calculate a running total before zero closes the loop:
`(+Mail)Sum=0(-Mail)`
`(+Mail)Loop="`
`(+Mail)Amount=?#;type in amount(-Mail)`
`(+Mail)Amount(-Mail)` [decimal tab]
`(+Mail)Sum=[Amount+Sum](-Mail)`
`"(-Mail)`
`(+Mail)%Loop@Amount(-Mail)`
`(+Mail)Sum(-Mail)` [decimal tab]
3) When using a counter, the program asks how many values to be entered. Fill in the answer at the start of the 'pass' at the variable counter slot and by subtracting one from the counter after each entry the loop will be repeated the required number of times:
`(+Mail)Sum=0(-Mail)`
`(+Mail)Counter=?#;type in number of entries(-Mail)`
`(+Mail)Loop="`
`(+Mail)Amount=?;type in amount(-Mail)`
`(+Mail)Amount(-Mail)` [decimal tab]
`(+Mail)Sum=[Amount+Sum](-Mail)`
`(+Mail)Counter=[Counter-1](-Mail)`
`"(-Mail)`
`(+Mail)%Loop@Counter(-Mail)`
`(+Mail)Sum(-Mail)` [decimal tab]
The loop is now repeating until the counter is equal to zero.

```
(+Mail)Fullname = Title & " " & Forename & " " & Surname: Fullname(-Mail)↵
(+Mail)Customer_Address(-Mail)↵
↵
(+Mail)Salutation = Title & " " & Surname(-Mail)↵
Dear (+Mail)Salutation(-Mail)↵
↵
Congratulations on completing your first month's membership with The
Gorgeous Gadget Club.  We hope that our range of products will provide you
with long and faithful service.↵
↵
MONTHLY STATEMENT↵
↵
September purchases:  £(+Mail)Total=[Cost 1+Cost 2+Cost 3+Cost 4]:total(-Mail)↵
↵
Less VAT @ 15%:  £(+Mail)VAT=[Total*0.15]:VAT(-Mail)↵
↵
SUM OWED:  £(+Mail)Sum=[Total+VAT]:sum(-Mail)↵
↵
Next month's special offer includes the Sooner Booner Toaster Poacher ↵
```

Automatic VAT calculations

```
Dear Mr and Mrs Cadwallader↵
↵
Thankyou for renewing your membership with the Plunkett Green Operatic
Society.  ↵
↵
Expenses incurred for two membership cards each lasting a year and tickets
for next month's dinner and dance at the Pavarotti Gala House are as
follows:↵
↵
(+Mail)Sum=0(-Mail)↵
(+Mail)Counter=?#;How many entries?(-Mail)↵
(+Mail)Loop="(-Mail)(+Mail)Amount=?$;type in amount(-Mail)↵£(+Mail)Amount(-Mail)↵
(+Mail)Sum=[Amount + Sum](-Mail)↵
(+Mail)Counter=[Counter-1](-Mail)↵
"(-Mail)(+Mail)%Loop@Counter(-Mail)↵
→       £(+Mail)Sum(-Mail)↵
↵
We would be grateful if you could cross all cheques and make them payable
to the Society.↵
↵
```

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CP/M

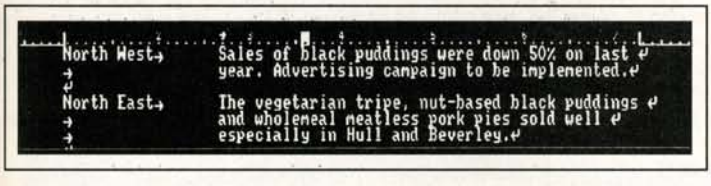
1. You have the following files on a disc:
`VITAL.DOC USELESS.DOC ERASE.ME RUBBISH.TXT IMPORTNT.TXT NONSENSE DRIVEL PUT_IN.BIN NOGOOD.DOC TEMPRARY.TXT`
and want to erase them all except VITAL.DOC and IMPORTNT.TXT. What's the quickest way to do it?

2. You want to check if a file called HIDDEN.COM is on a disc. Typing DIR you get `SYSTEM FILE(S) EXIST` ...What's your next move?

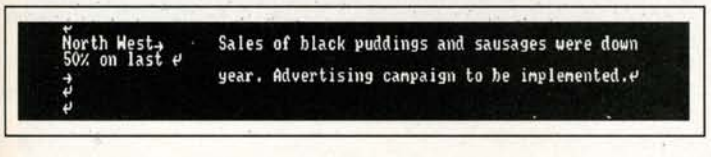
3. On a 173k disc you have just two files, group 0 LocoScript documents called THESIS.1 and THESIS.2; both are 40k. Plenty of room, then, to PIP across an extra file from another disc, BIBLIOGR.PHY, which is 20k. However, when you try it you get the following message:
`ERROR: DISK WRITE NO DATA BLOCK - A:BIBLIOGR.$$$`
Why, and how can you get round it?

LocoScript

1. A friend calls round at two in the morning in a blind panic. The business report they are editing which must be in by nine looks like this:

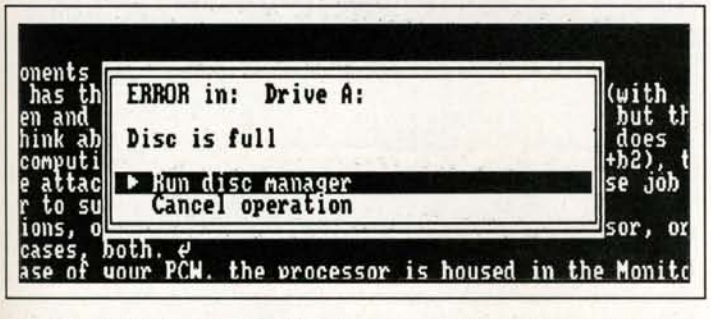


but when they try to add a word to a line, this sort of thing happens, necessitating tedious editing of the tabs:



'There must be an easier way,' they say. What is it?

2. Two hours later they're back. In the middle of editing a document, they suddenly had this happen. What do you tell them to do?



3. What do they do if they want to commence printing again from a certain page – if a page gets screwed up in the printer for example?

4. At five thirty they return. 'Help! I've just started printing out a fifty page report and it's the wrong one! How can I stop the printer without turning the machine off, and then lose all my work in the M drive?' – how indeed?

BASIC

1. The following morning your friend rings up asking how to incorporate a BASIC listing into an article written in LocoScript. What do you tell them?

2. Next they can't LIST a BASIC listing called SECRET.BAS to have a look at it. How can you unprotect a protected listing like this to be able to LIST it? How do you protect a listing you have written?

3. You want to write a long listing in which many chunks of lines are almost identical, except that PRINT statements are replaced by LPRINT etc. You have no replace or block copying functions in the line editor in BASIC. How do you make your life simpler?

General knowledge

1. Which of the following takes the longest time?
a) An interglacial period
b) Waiting for Amstrad to phone you back 'tomorrow without fail'
c) LocoScript 1 scrolling to the end of a 50k document

2. What is the derivation of the word 'Amstrad'?
a) Korean word meant to sound like English
b) Acronym for *A*lan *M*ichael *S*ugar *TRAD*ing
c) German slang for 'cheap and clanky'

3. What is the best way to get a screen dump on a 9512?
a) Make the daisywheel print it out in dots using the full stop
b) Buy a polaroid camera
c) Buy a dot matrix printer

4. Which of the following pieces of music can the PCW play best?
a) One Note Samba by Antonio Carlos Jobim
b) 4' 33" by John Cage
c) Toccata and Fugue in D Minor for Organ by JS Bach

5. What is a Z80?
a) Cambridge Computers' portable
b) The name of the processor in the PCW
C) Vitamin broken down by radiation from PCW screen

6. Which of the following would take up about 4000k as a LocoScript file?
a) The Oxford English Dictionary
b) The Bible
c) 8000 Plus's expenses claim for last month

7. Which of the following drivers enable you to print a LocoScript 2 document on a Diablo compatible daisywheel printer?
a) 3 wood
b) D630.PRI
c) Nigel Mansell

8. Which of the following would be the correct reply to Amstrad boss Alan Sugar if he pointed to the PCW's microchip and asked 'what's that?'
a) It's the Z80, Sir
b) About £3
c) Slow

9. Which of the following has the most bugs?
a) Fleet Street Editor Plus
b) Natural History Museum
c) American Embassy in Moscow

10. How many times faster is Mini Office's word counter than LocoSpell's?
a) 60
b) 600
c) 6

Answers overleaf...

ANSWERS to previous page

Score up to three points for each answer depending on how well you knew it, and be honest!

CP/M

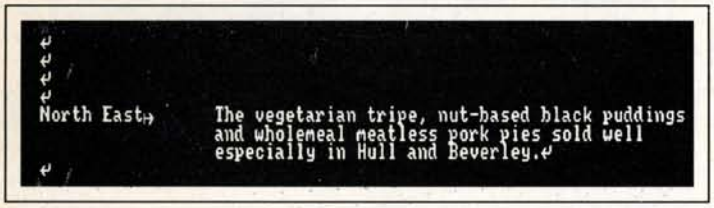
1. *8512s*: Put your CP/M systems disc (or a copy) in drive B, your disc with the files on drive A and type `B:ERASE *.*[C]`[RETURN].
9512s/8256s: Type `B:ERASE *.*[C]`. At the prompt 'put disc for B in drive' insert the CP/M systems disc (or copy) in drive A. Press any key. At the prompt 'put the disc for A in the drive' replace the disc with the files on.

The PCW will give the name of each file and ask you to confirm with y or n whether you want to erase it or not. Give y for each file you want to erase and n for files to keep.
2. Type `DIRSYS` and the system files will be shown.
3. LocoScript has kept the old versions of each THESIS document as a 'limbo' file in group 8. This corresponds to user group 8 in CP/M. LocoScript ignores groups 8 and above for purposes of calculating disc space but CP/M doesn't. So CP/M thinks you have four files of 40k on the disc, making 160k altogether, too much to allow the 20k bibliography as well.

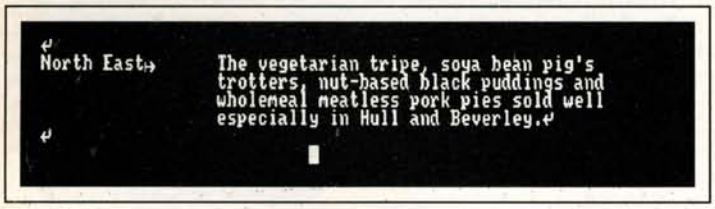
You have to erase the documents in group 8. Type `USER 8`[RETURN] and at the 8A> prompt `ERA *.*`[RETURN]. Return to user group 0 by `USER 0` and carry on as normal.

LocoScript

1. They should put 'hanging tabs' for each paragraph. These are put into a document by [ALT][TAB] together. They have the effect that lines below the top one take their left-hand margin as the position of the tab, not the margin:



The advantage of these is that you can edit the text without destroying the shape of the paragraph – the new text reflows correctly.



To put 'hanging tabs' in place of the ordinary tabs they've put in, your friend will have to replace all [RETURN][TAB]s by nothing and then all the remaining single tabs by hanging tabs.

They can use [EXCH] and give the text to find as [RETURN][TAB], the string to replace with as nothing and make the exchange automatic to the end of the document. Then back at the beginning they similarly use [EXCH] giving a tab as the item to be replaced and [ALT][TAB] as the item to replace it with.
2. Go to the disc manager as suggested. Move as many big documents as possible from drive A to drive M, or drive B if possible ([f3] Loco 2, [f4] Loco 1) but not the one currently being edited.

When there is enough space left to continue, [EXIT] will take them back to where they were before the message appeared. They must remember to rescue the files moved to drive M by moving them to another disc before switching off, or they'll be lost for ever!

You should tell your friend imperiously that they shouldn't work with such long documents and 15k is the sensible limit.
3. Pressing [PTR] goes into 'printer control state' and stops the printer in its tracks but [EXIT] will let it resume. What they have to do to stop it completely is press [PTR] then *Loco 2:*[f1] selecting 'Abandon printing' *Loco 1:* [f7] 'Reset' and confirm.

[EXIT] leaves printer control state and returns to normal. If you want to recommence printing from the current page, go via the 'Document' option, [f7] in Loco 2 or [f5] in Loco 1.

BASIC

1. When saving the BASIC listing, save it as an ASCII (simple text) file by typing `SAVE "PROGRAM.BAS",A` instead of `SAVE "PROGRAM` (or whatever name the program has).

In LocoScript, copy the listing onto the disc which is to have the document with the listing inserted ([f3] – if you only have a single drive machine, you'll have to insert the original disc, copy the file to the memory, then insert the destination disc and copy the file from the memory to the disc).

At the point in a document where you wish to insert the listing, hit [f1] in Loco 2 or [f7] in Loco 1 and 'Insert text'. Select the listing as the file to insert and there it appears in your document.
2. Create an empty BASIC listing by typing `NEW`. Save the (empty) current listing by typing `SAVE "DUMMY.BAS",A`[RETURN] then `LOAD "SECRET.BAS`[RETURN] or whatevername. Type `MERGE "DUMMY` [RETURN] and then `SAVE "SECRET`[RETURN] (or other name if you want a separate unprotected version). The new version is unprotected and can be LISTed and LLISTed etc. This may not work on a 9512.

A BASIC listing can be protected from prying eyes by saving it as `SAVE "SECRET.BAS",P` (or any other name).
3. Prepare the listing as a LocoScript document – you can use the block copy, paste, [FIND] and [EXCHANGE] functions, replacing PRINT by LPRINT and so on manually.

Save it and from the disc manager make an ASCII file ([f1] Loco 2, [f7] Loco 1) giving the new name as ending in .BAS – it will now run as a normal BASIC program.

General Knowledge

Score 2 points for each correct answer of b), 1 for each reasonable guess a), zero for each wrong answer c)
In case you're wondering, in question 3, it is possible to write a BASIC program to produce a screen dump on a 9512 using only the full stop on the daisywheel, and we've seen it done, though taking a picture is a lot quicker and probably cheaper when you consider the short time the standard plastic daisy full stop will last. Screen dumps are not possible on printers other than that supplied with the PCW.

In question 4, the piece 4'33" is totally silent of course. One Note Samba has rather more than one note in it but at least you can get the first two lines. In question 8, the 'right' answer is based on a well known story told about Alan Sugar. ■

How did you score?

You should have a total out of 50. Multiply by three and take this as your PCWIQ.

132-150 Around 8000 Plus Technical Editor standard. You must spend virtually all your spare time working on your PCW. Seek help immediately

114-129 Still worrying I'm afraid. Try to eat plenty of fresh fruit and veg and exercise more

90-111 A good safe boring average. You have a future in writing accounts programs

66-87 Well, you can impress your great-grandchildren when you tell them you can still use a slide-rule and a typewriter

42-63 Maybe the typewriter wasn't such a bad idea after all

18-39 Technology? Who needs it! Did Shakespeare write Hamlet on a PCW? Did Beethoven have an Atari ST and MIDI synthesiser? I think not

0-18 Roughly 8000 Plus Editor standard. You obviously don't worry about things much. You will live to be 110

Less than 0 You aren't very good at arithmetic. You have great potential as an 8000 Plus Staff Writer.

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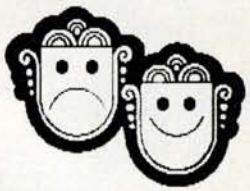

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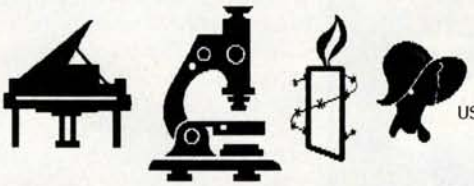

USEFUL SYMBOLS, ETC

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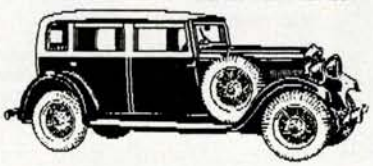
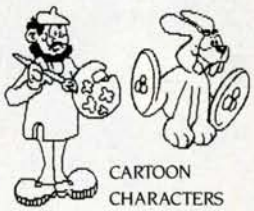
GENERAL INTEREST





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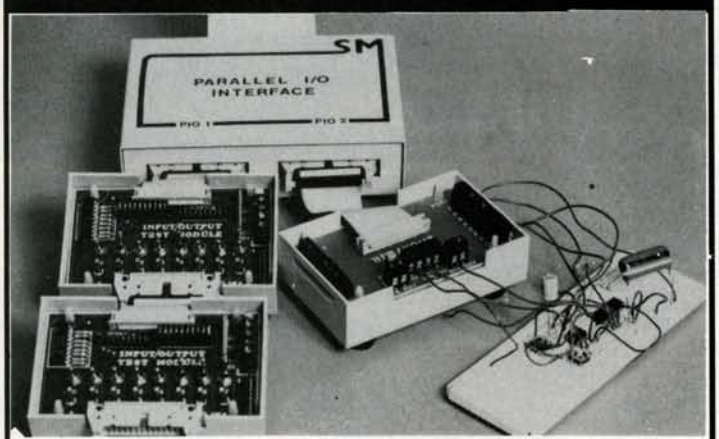

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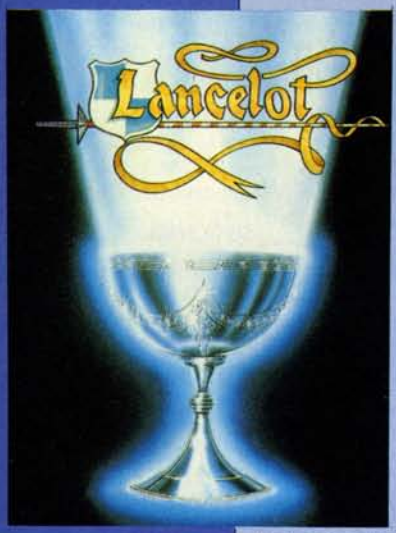
KNIGHT LIFE

Tony Flanagan looks at Mandarin's latest adventure



LANCELOT

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We're all familiar with the story of Princess Nubilia and the Nymphs of the Triangular Bath-Tub but has anyone heard of Thomas Malory's 'Le Morte D'Arthur' a perverse little book published in 1485 by that hitherto unknown forerunner of desk top publishing William Caxton.

This book recounts the scurrilous escapades of King Arthur and his local Rotary Club (more popularly known as the Knights of the Round Table). King Arthur, the legend goes, had an unhealthy fascination with round tables. This was fine as far as dinner was concerned but it certainly didn't do much for his table tennis. His wife, meanwhile, the beautiful Lady Guenever, had a more than healthy fascination for extra-marital liasons, mainly in respect of Lancelot, the eponymous hero of this latest adventure from Level 9.

The game is roughly divided into three parts. In the first, Lance must find his way to Camelot to be knighted by king and cuckold-to-be Arthur himself. Much of this part of the game involves trudging round the dingy streets and alleyways of that famous non-existent town getting disgustingly filthy. If it's not the contents of slop buckets from bedroom windows, it's low-flying falcons. Understandably, King Arthur won't even see you till you clean up your act.

Chivalry's not dead, it's resting

As you might expect, there is no shortage of opportunities to exercise your chivalrous impulses. A journey by sea will take you to the fair Elaine, condemned to simmer 'naked as a needle' in a bath of boiling water! This is not, thankfully, the game's only dubious encounter. Damsels (or 'damosels') are many, though some have the irritating habit of turning into horrendous fiends the moment lustful Lance gets amorous.

Indeed, in the final part of the game, it is moral as opposed to bodily cleanliness that assumes most importance. Lying, thieving and fornicating – of which there is ample opportunity – will do you no good at all. Or put it this way, it might do you some good but it won't actually get you any nearer to completing your quest. Only a virtuous knight can actually put his hands on the holy chalice.

The game contains numerous locations which cumulatively create a vividly Arthurian world. Chapels and churches, castles and towers, rivers, wells and streams exist in a picturesque and varied landscape of meadow, mountain, forest and wood.

Points are awarded for displays of chivalry, valour or benevolence. Failure in any of these departments will also lead to points being taken away so that it is possible to end a session with a score as low as –590 points, depending just how morally bankrupt you happen to be.

The game permits a full range of commands, some of them the powerful ones already seen in other Level 9 adventures. GO TO and RUN TO (but particularly the latter) cut out the need to retrace old ground, whereas FOLLOW enables you to keep an eye on other characters who can, often by accident, lead you to important clues or locations you might have originally missed. UNDO, as the command suggests, brings you back from the dead or undoes an especially bad mistake.

Insufficient proof

The system commands permit BRIEF and VERBOSE modes of a text which is, for the most part, very well-written. 'Dusk began to suck the colours from the greying world' is just an example of how good the writing can be. Responses such as 'Verily restart' and 'Prithee – turn to things of import!' lends an appropriately quaint flavour to the game-play. Unfortunately, the text could have done with one more proof read what with one spelling mistake ('challanged' sic) and where, at one point, a character 'alits' from his horse.

Particularly impressive is the number of incidental characters the game packs in – urchins, damsels, monks, priests, pilgrims, soldiers, knights and so on. This, together with the excellent graphics, adds a great deal of atmosphere to the game.

The package comes complete with a map of the Arthurian world and a comprehensive playguide. The latter is designed with both the newcomer and veteran in mind and also has appended to it the story of King Arthur and the Knights of the Round Table retold by Christina Erskine.

All in all, Lancelot is probably the best adventure around at the moment on the PCW and the best thing produced to date by Level 9. It is both very playable and very entertaining. (A nice fing to have a ROUND the TABLE at (K)NIGHTS, eh ARFA?) ■

LANCELOT

PLUSES

- ▲ Rich literary source; faithful but not boringly so
- ▲ Powerful commands for short-cuts
- ▲ Atmospheric and well-drawn graphics
- ▲ Well-written text
- ▲ Plenty of incidental action

MINUSES

- ▼ Occasional bugs in the review copy
- ▼ Some puzzles can lack ingenuity

ATMOSPHERE	**5/5**	**INTERACTION**	**5/5**
CHALLENGE	**4/5**	**VALUE VERDICT**	**5/5**

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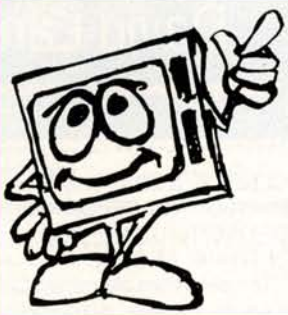

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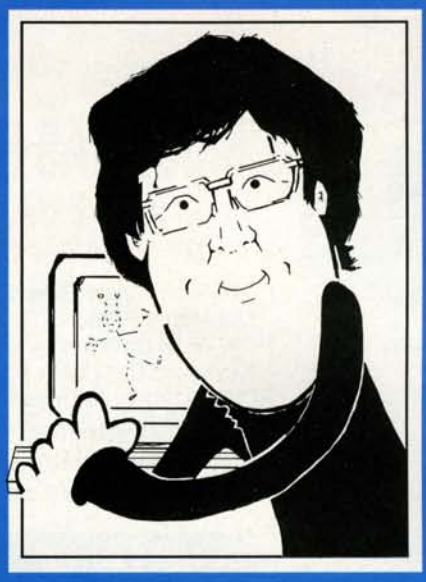

LANGFORD

A page in the company of author and PCW pundit David Langford

In the High Court today Mr Justice Gleet summed up in the case of Stupefying Software Ltd vs. Halibut. Members of the jury, the facts of this case have already been put to you several times by counsel, with such matchless eloquence as to render them in all respects unintelligible. Numerous weighty documents have been placed in evidence, and although these purport to be elementary "software manuals" devised for easy assimilation by the meanest intellect, it would perhaps not be wholly unjust to suspect that their meaning eludes you as it eludes me. Let me therefore strive to convey to you, probably for the first time, what this litigation is about.

Stupefying Software Ltd, as its managing director has informed this Court, is devoted to expanding the frontiers of knowledge, freeing mankind from mental drudgery, and (whether this be desirable or no) hurling its customers into the twenty-first century. To this laudable end, the company manufactures various useful computer "programs".

It is agreed that the defendant, Mr Alfred Halibut, purchased one such item, a light-hearted and diversionary game entitled *MegaRambo Nukefest.* Nor is it disputed, irrespective of the loathing with which one might regard it, that this was delivered in good working order.

Stupefying Software Ltd has consequently argued, with a smugness which you may or may not have found intolerable, that its part of the contract was amply fulfilled. Yet even the most bovine and slumbrous occupant of the jury box (I do not by this phrase wish to call undue attention to the snoring gentleman in the back row) must have dimly gathered that Mr Halibut disagrees.

The point at issue is an interesting and legally lucrative one, concerning as it does the unwritten aspects of the transaction. Let me strive to offer some examples sufficiently elementary for your limited comprehension. Were you, as a keen gardener, to order three tons of horse manure for the delectation of your roses, the technical fulfilment of this order would not impress you should the substance be unloaded on top of your car. Were you the proprietor of a lodging-house whose regulations prohibited cats and dogs, you would not feel debarred from ousting a tenant who, while adhering to the actual letter of the law, had established a small colony of wolves and a puma.

You may ask whether these analogies have any relevance, but I hope you will not, since should you do so I would instantly order your committal for contempt of court. Mr Halibut claims that despite providing a superficially functional program, Stupefying Software has acted as unreasonably as the villains of my examples.

On receipt of his computer disc, Mr Halibut attempted to copy its contents for purposes of what is termed "backup". This process, the Court has been informed by authoritative if semi-literate expert witnesses, is to the computer user as important as life insurance, as psychologically vital as underclothing. You may therefore consider that on attempting to use his copy, Mr Halibut was rightly perturbed to be greeted with the message, "STUPIFYING SOFTWARE THEIFGUARD PROTECTON SYSTEM, YOUR ATEMPT TO DO ILLEGAL COPYING HAS FALED HA HA!!!"

Despite the anguish and distress of hazarding a "master" disk in actual use, the defendant was resolved to test his newly acquired educational product. This time he encountered the no less peremptory remark, "THIS PRODUCT IS PERSONIZED WAHTS YOUR NAME ?" Having typed his reply, he was ejected from the program with the derisive retort, "ILEGAL USER !!" By trial and error, and (as he has told this Court) the application of considerable intelligence, the defendant deduced the humiliating need to type his name as it appeared on his receipt; that is, as "A HALBIT", in capitals.

Mr Halibut admits that his game thereafter functioned as advertised, displaying tasteful and graphically artistic nuclear detonations over the relevant tracts of South-East Asia. However, his pleasure was further muted by the fact that one-quarter of his computer's screen was effectively unused, instead showing the words, "THIS POGROM REGISTERD FOR; A HALBIT 299 MAFEKING VILLAS NW27 UNAUTORIZED USE BY OTHER OR TRANSFER OF LICENSE IS ILEGAL UNDER COPYRIGT ACT REPORT ILEGAL COPYING TO STUPIFYING SOFTWARE AT ONSE !!!"

The defendant claims to have felt deeply insulted.

Speaking for the plaintiff, the managing director of Stupefying Software has told the Court that without such basic precautions, Mr Halibut would be inevitably tempted to bulk-mail illicit copies to his numerous acquaintances, to advertise them for sale with criminally photocopied instructions, and to hawk them at less than cost on the streets of Singapore.

Here Mr Halibut's case strays from the broad paths of law and reason into the murky undergrowth of the controversial. Such prejudice and distrust, he alleges, left him thunderstruck. How, he movingly enquired until I was compelled to silence him, how could Stupefying Software imagine him capable of misconduct on this scale? His eyes having been opened to the corruption of the software world, Mr Halibut made haste to stop the cheque he had sent to Stupefying Software and which through an oversight had not yet been cleared.

For, as he argues and you may feel bound to agree, if such untrustworthiness is indeed prevalent, how could Mr Halibut be sure that forged copies of his cheque would not be disseminated to numerous computer dealers, or hawked at large discount on the streets of Singapore?

You may think this reasoning disingenuous. Repelled and nauseated though you must be by Stupefying Software Ltd and its products, you may feel that the action for non-payment is justified and must succeed. However –

(At this point the jury, all coincidentally computer owners who had struggled with ponderously protected disks, found Mr Halibut not guilty without leaving the box, gave him three cheers, and begged that all costs should be borne by Stupefying Software.) ■

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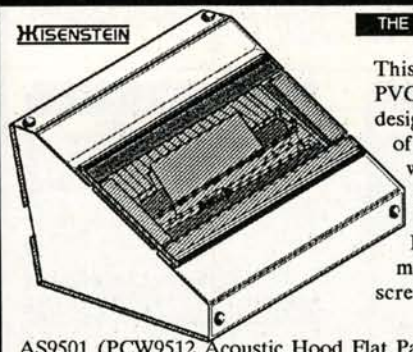

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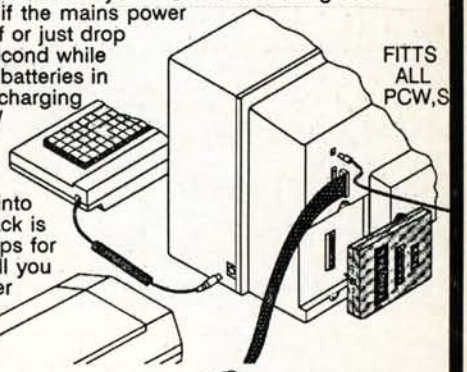

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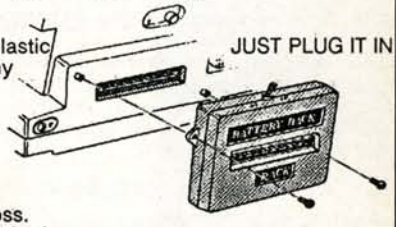

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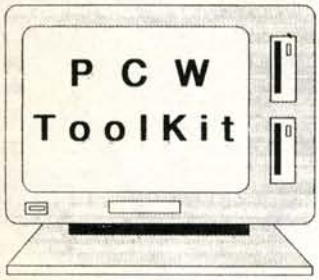

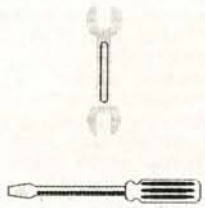

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ANATOMY OF A PROGRAM

Steve Patient starts a new series telling you how to get your very own specialist programs written and marketed...

If you use your PCW for a specialist application – and most of us do – no piece of software can do exactly what you want. You may well find it worth while to get a program written specially for you for that purpose – and having done that, you may well find it worth while marketing your program to others in the same business or with the same interests. But how do you go about it all?

When computers first grew respectable, which in the commercial world means on the day someone agreed to actually pay money for one, the father of computing Alan Turing said that six machines would be enough to service all the computing requirements of Britain. With hindsight this opinion sounds just a little naive – we know better. But he had the figures, not six, of course, but the hundreds of thousands of pounds the machines then cost, on his side. In those days a few hundred thousand pounds would buy large chunks of some third world countries.

Getting the computers to perform the feats the salesmen promised meant mortgaging the other half of the premises to hire programmers; and these tended never to move out. In those early days the cost of programming the machines often matched the cost of the machines themselves. Not only were the initial costs high but the programs needed constant minor tinkering as well as major kludges at regular intervals. A big computer in those days might have been called many things but never user friendly.

The success of the modern micro is due in no small part to customers being able to buy software off the shelf to solve almost any problems they might have. But this standard software is only there because of computer hardware and operating system standardisations: though the PCW's 3" discs and CP/M operating system are an old standard, at least they're standard. Having a large number of identical machines on which to run the programs allowed the programmers to provide general solutions to the standard problems, like word processing and data handling, and spread the costs over the whole user base – because LocoScript suits nearly everyone, the consequent opportunity for mass production makes it laughably cheap.

Exotic problems

This would be all very well if nobody ever managed to think of another way to use their machines; but they do. So what happens if you need to solve a more exotic problem?

In many ways the success of the PCW machines has highlighted this aspect of computing. PCWs are really the first complete computer system with the kind of power demanded by business to be sold at a price home users can afford. Since few home users are actually running a business one of the effects of this has been to throw up a great many odd requirements. If 8000 Plus's mailbag is anything to go by PCW owners are constantly searching for ways to make their system perform functions the designers hadn't foreseen.

So, let's take a typical PCW user, a retired clergyman interested in becoming the first person to breed a pink budgerigar. His rooms are full of breeding cages, birds on special diets and birds in transit from other enthusiasts. The piles of paper in which he has hitherto kept notes on breeding cycles, dietary requirements and on which phases of the moon particular birds are introduced to each other now threaten to overwhelm him.

In a moment of lucidity he reaches for the dusty PCW on which witty sermons were once composed wondering if LocoScript will provide the answer; unfortunately it doesn't. Fine for letters and lists, but it can't do what he wants, ie. work out the ideal phase of the moon for introductions based on past breeding records. He needs new software.

Trundling along to the only shop the village boasts, a general store, he examines the software on offer. The proprietor, who doubles as postmistress, tells him that she has no budgie breeding programs and isn't sure any will be available – there's no call for it she says sadly, returning dBase II to the shelves alongside the cat litter. He will probably have to get some specially written. Exit sad clergyman – and it seemed such a *good* idea.

For most people, the thought of having software written – sometimes known in the trade as commissioning a program – may seem a little daunting, but it needn't be so bad if you go about it in the right manner. Mostly, people don't.

When those unfamiliar with the computer industry mention that they need software usually somebody keen will offer to do it, a friend, or an enemy perhaps; someone who

Land of milk and money

How much does it cost to have a program written by a professional? The answer is always too much. In the days of Cobol and Fortran programs were charged by the line, now the situation is more fluid. In the case of a large program a business or government department would have a preliminary study prepared and put the work out to tender. Taking our rather smaller example there are two approaches to the problem.

The clergyman might pay for the whole thing and buy the copyright on the finished code, which will be expensive since there is no way a programmer is going to charge less than whatever they see as a living wage, probably five to ten pounds per hour over several weeks depending on their overdraft.

More realistically, the programmer would charge a sum sufficient to defray their initial expenses and keep the rights to the program, hoping to sell it to other budgerigar breeders in the same situation.

In reality, the second option is the only viable one, and if the programmers don't think they can make more than the one sale they probably wouldn't consider the project at all.

Defining 'Definition'

1 – State the objectives of the current system
2 – Document the current system to see how well it's doing
3 – State any new objectives the proposed new system will have to meet
4 – Note any constraints on the new system eg. cost of implementation
5 – Note all details of user requirements, data elements, data volume etc
6 – Prepare software specifications – to include inputs and outputs
7 – Produce a report and agree the specification is complete.

has written a program in BASIC to calculate their average mileage which only takes four times longer to use than a calculator. With a sigh of relief our clergyman sinks back into his armchair convinced that the problem is in hand...

Over the next three weeks he sees nothing of his friend until the man drops in one evening to announce that he's finished, proudly plonking a disc on the coffee table with self congratulatory noises.

Three classic mistakes. The first is that there was no mention of exactly what the program should do; the second is that there is no documentation and the third is the ludicrous idea that he's finished. (He might be finished as a programmer but that's a different story.)

The software will not run, if it does run it will do so as well as a three legged dog and anyway, it will not perform as the clergyman requires. All these things are certain. The kind of program intended for use by others needs to be written as part of a larger discipline.

Flash system

This discipline is called Systems Analysis and divides nicely into six phases.

1 – Project Selection
2 – Feasibility Study
3 – Definition Phase
4 – Design Phase
5 – Implementation Phase
6 – Evaluation Phase

In a large project all of these phases would be quite separate and many of the people involved specialists in just one part of it. In a small project the programmer would probably perform all the separate functions and perhaps telescope some of them together. This is no problem as long as every part of the process is there. We will now enjoy a quick overview of each phase.

The Project selection in our imaginary case has already been done by the customer. The budgerigar enthusiast is looking for a solution from the computer world. This, in itself, is no guarantee that the programmer can provide one.

The Feasibility study is often neglected on the grounds that 'Yes, of course we can do it'. That a thing *can* be done and whether it *should* be done are two different animals. Feasibility includes determining whether or not a computer based system is the best one; would budgie feathers get in the disk drives? It may well be that the cleric in question needs no more than a sensible card filing system and a page a day diary. If the feasibility study indicates that a computer program isn't the best way to tackle the problem, and the programmer isn't desperate to have his children shod, then he should stop right there and explain why. In the long run bad solutions do not win brownie points.

The feasibility study will inevitably spill over into the Definition Phase, which should be *fully* documented. Just like a builder's estimate, it is there both to define the extent of the work and protect both sides in the event of dispute. The important parts of the Definition are in the box marked Definition. This is by no means adequate for a large project but will do for Budget Budgie Breeding Plus.

The report, especially the parts stating the design objectives, should be understood and agreed by both parties before going any further. At this point it's easy to add a codicil noting that an extra facility has to be included for tracking quarantine periods on imported budgerigars but it might not be so trivial once the coding starts.

Design of the times

By now our clergyman has had a programmer hanging around the place upsetting the birds for several days and so far the chap hasn't even turned the PCW on. By now he may even be beginning to wonder if the chap knows how to do it, but have no fear, this is a good thing; the programmer has to understand the scope of the job. At last he's reached the Design Stage. Pulling out a large ruled pad and pushing several budgerigars off the end of the desk he sits down and begins writing, again.

This time the documentation is for the actual program. Note how a real programmer produces his documentation before he starts writing code, in some cases even before he decides which language to use. It would take too long to go into detail here on this part of the process, but once again he will produce a report which stays with the customer.

Finally, the PCW gets turned on, and the programmer begins to code up the software in accordance with the design document. This stage, Implementation, is where all the code gets written, a good attempt is made to debug it and the user documentation is completed.

When all this is finished the programmer will climb out of the chair and the clergyman climb into it. The programmer supervises the change over to the new computerised system making sure that the clergyman understands it and is using it properly. If everybody concerned agrees that the system is performing as agreed then the Programmer submits his invoice and most of it is paid. Not all, because there is one final stage.

Evaluation: some bugs will show up in the first few days or weeks; this is inevitable with any software. Maybe the program expects all budgies to be part of a breeding pair and can't register a single budgie without demanding the name of its mate; maybe it just stops working inexplicably if you enter 'green' as the colour of one of them. These will be fixed as found, and the final amounts paid over. The Evaluation part of the Definition is for the benefit of the programmer as much as the customer. If the programmer performed the early parts of the work correctly there will be no problems, but there might be an improved ('upgraded') version later on. ■

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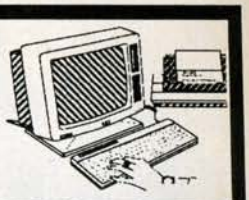

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THOUGHT TRANSFERENCE

Being the second of Alec Rae's informative and entertaining articles on the Cambridge Z88: how to transfer files to your PCW

One of the dreams of all great thinkers is to be able to capture their every priceless pearl of wisdom as it flits like a butterfly through their brain, no matter where they are. Tucking a Cambridge Z88 portable computer under your arm makes that dream come true no matter where they might "wander lonely as a cloud"...

Putting information into a Z88 is easy. Just press the two [SHIFT] keys, press [SQUARE] and P (for PipeDream. We don't know why the word-processor is called PipeDream. You just have to accept it) and start to type.

When you have immortalised the vagrant thought you can save it to file ([DIAMOND] F(ile) S(ave) and supply a file name when prompted). If you still have a bit of work to do you can leave it as a 'suspended activity' – something that remains there and can be called up immediately just by re-entering PipeDream.

Even if you switch off (the two [SHIFT] keys again) the suspended file will still be there waiting for the last line of your sonnet, or whatever, until you are once again visited by the muse. The only niggling worry with suspended activities is that the work is likely to get lost if anything goes wrong and you have to reset the machine.

However genii are not noted for their modesty. What is the point of creating faultless verse if the only way other people can read it is by handing your Z88 round the company and showing them how to scroll down the tiny screen?

The great escape

If you ever wonder what all the ESC or escapes that are often littered about computer manuals ESC is simply a code that tells the computer that the next thing that is typed in is a command rather than a letter. You can get it by pressing the [EXIT] key on the PCW or the DIAMOND in the Z88.

Where's the printer?

This is where the concept of the Z88 could be thought to have come slightly unstuck. Z88 owners without a PCW would have to consider buying a printer if they want to print out the latest version of their play, tentatively titled Hamlet, Prince of Chiswick, and that could cost more than the computer. Then you've got the problems of hooking up the Z88 to the printer.

Since one of the major reasons for the popularity of the PCW series is that they come bundled with a printer at a very reasonable price all PCW owners need to do is buy an RS232 (the box that sticks into the expansion port at the back of the PCW – about £50 – it also enables you to do things like connect alternative printers, modems and so on to your Amstrad) and a £10 cable to connect the two computers (the Z88 has its own inbuilt serial port taking a 9 pin DIN female connector).

Always switch the PCW off before fitting on the RS232 (it can have drastic consequences if you don't, such as blowing up the microprocessor on the PCW!) but from then it is the work of a moment to set things up and make the transfer. It does mean tackling all those complicated comms type things like baud rates and parity but it's not really as difficult as it sounds.

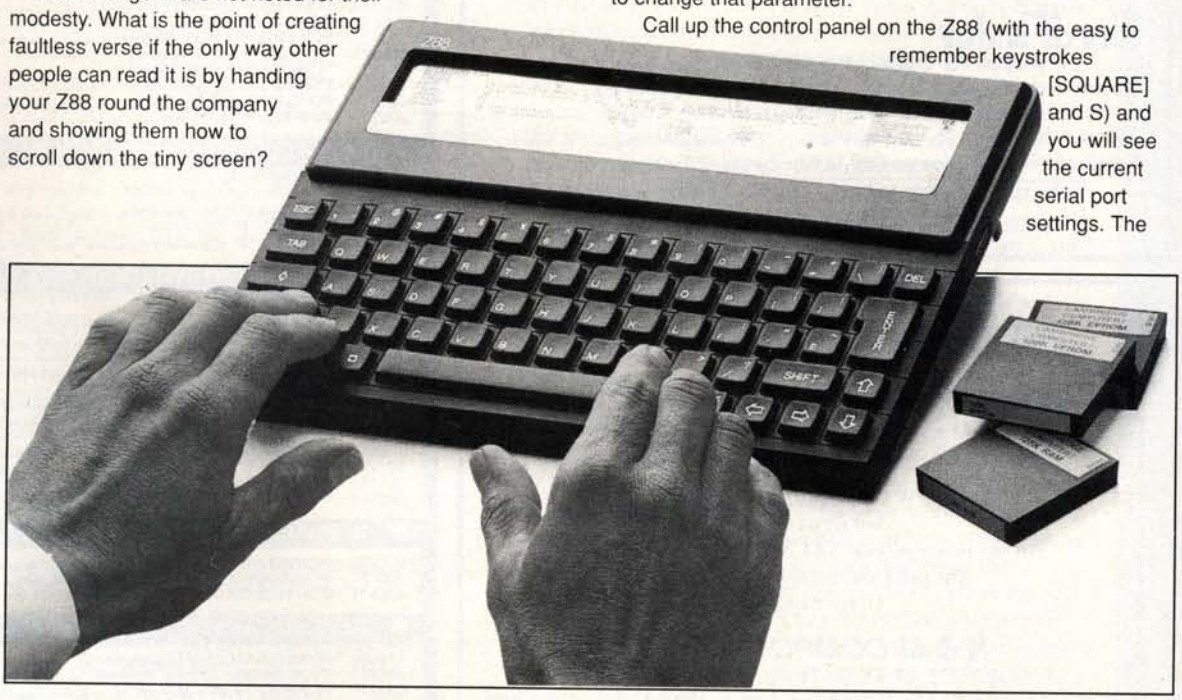
If you want you can use a special comms program (like the comms section in the Mini Office suite of programs, for instance, or MEX or Dialup or Chit Chat...) or you can even buy a special transfer kit with a cable and software specifically to transfer data between PCW and Z88 (C Port make one – details from them on 01 376 5098. Price £24.95).

However it is perfectly feasible to do it without anything fancier than the Import/Export section on the Z88 and faithful old PIP on the PCW.

We have an understanding

First it is important to make sure the two machines are talking to each other in the same way at the same speed. Luckily enough both computers naturally want to transmit and receive data at the same rate (9600 baud, or in English, approximately 960 characters a second) so unless you have changed the setting for some other reason you won't need to change that parameter.

Call up the control panel on the Z88 (with the easy to remember keystrokes [SQUARE] and S) and you will see the current serial port settings. The



ones you are interested in are those occupying the far right column. It should show the transmit and receive baud rate (both 9600), the Parity as None and XON/XOFF showing YES.

If anything differs just cursor to the entry and correct it. You can overwrite the figures for the baud rate, press N for None as the Parity and press Y for Yes for the XON.

It would be possible to transfer with XON/XOFF set to off. XON is a method of making sure that the transmitter doesn't go too fast for the receiver so it is obviously safer to set both computers to XON on.

Although the PCW is naturally set to 9600 baud rate and Parity None every time it's switched on the XON is always set as off. To switch it on needs the utility SETSIO.COM on your disc. To check the current status just type SETSIO and the machine will print out a line of text that tells you the baud rate and interesting details that may need looking at if you are doing more complicated tasks, like transfering data by modem.

To make the changes all you need do is type SETSIO XON on and the same line of details will print out on screen – only this time showing that XON is set to on.

Export Awards

The most common method of operation will be transferring the fruits of your inspiration from the Z88 to the PCW – for printing or for saving to disc. Luckily this is by far the easiest direction of travel.

First have PIP.COM either on your disc in A: or in the M: drive of the PCW. Type A:PIP (or M:PIP if it's on M:) and PIP's * prompt will appear instead of the usual A>. Let's assume you are transferring a poem called 'Daffodil', you would then enter something like DAFFS=AUX:. This literally means "Take anything that comes through the serial port (AUX:) and put it in a file called 'Daffs'". Don't press [RETURN] just yet.

Go to the Z88 and press [SQUARE] and X. This brings you to the Import/Export section of the machine. It is reasonably self explanatory. There are various choices but the one you are interested in is, not surprisingly, (S)end file. Press S and the computer will ask you for a file name. This can be any PipeDream file you have saved using the Plain Text option – the Z88's way of describing an ASCII file. So when you save a file [DIAMOND] F, S just cursor down to the Save Plain Text option and press Y for YES.

Stuffed up with code

If you have added in a lot of codes, bolds and underlines for example, these will be turned into garbage and clutter up the file. But if you have stuck to typing plain vanilla text intending to do the final polishing on the PCW, probably the best policy, it won't leave you with much more than a little rubbish at the beginning and the end of the file. You can just cut these bits out as normal.

Now press [RETURN] on both the PCW and the Z88. Nothing much will seem to happen except that a few numbers will spin on the Z88 screen, but finally everything will stop and the Z88 will return to the menu.

The PCW won't, however, but remains there in a state of suspended animation. This is because it doesn't know yet that the file is finished and it won't know until you send the equivalent of an [ESC] Z down the line – the CP/M end of file signal.

This is done in a different section of the Z88 – the Terminal ([SQUARE] and V). When this rather uninteresting screen appears just press [DIAMOND] and Z and the PCW disc drive will whirr for a few seconds as the PCW clears its buffers, updates the directory and closes the file. The transfer is now complete and the file is safely stored on your PCW disc.

Return Journey

The trip the other way is slightly more complicated and needs a little more effort. Just as you had to send an [ESC] Z to the PCW the Z88 wants the equivalent (either [ESC] E for the end of a file or [ESC] Z for the end of a batch of files. There is no place for standards in computing).

As the PCW doesn't have a Terminal section it is best to create a special file, again using PIP. This time write PIP end=con: [RETURN] – PIPese for "Take what I write on screen and put it in a file called End." Type in [EXIT]E [RETURN] and then finish with the traditional [ALT]Z to let CP/M know you want the file closed.

Pick the R for receive option (or even B for batch if you want to send a number of files) on the Import/Export screen on the Z88 and give a file name when prompted. On the PCW type PIP AUX:=SONNET [RETURN] and your immortal verse will start rushing along the cable at 960 characters a second. Again, when things go quiet, you can close the file on the Z88 by sending the end of file message with the command PIP AUX:=END [RETURN].

Remember that the files you transfer will be ASCII so when you load them into PipeDream you do it with the Plain Text option – the bottom line on the menu. ■

● *The Cambridge Computers Z88 is available from all branches of Dixons for £299 plus VAT. You can also get add-ons for it such as a database and a pocket modem to let you send your text from the hotel room or even the train station to your Microlink mailbox for later removal by your PCW back home!*

Its most common use though is as a portable electronic notepad for anyone who writes on the move. You really need RAM packs – extra memory – to cope with more than a couple of pages of text. Details on all these from your local Dixons. For details of a Z88 user club see this month's news.

Here's one we prepared earlier

Because PipeDream works as both a wordprocessor and a spreadsheet there are differences from most PCW wordprocessors. For instance the [TAB] key isn't for putting a nice indent at the beginning of a paragraph but to move from cell to cell in the spread sheet. This is fine unless you normally do start a sentence with a TAB, as many paragraphs do.

The other problem is the way you format text in PipeDream. Adding or removing words to a completed piece of text and using [DIAMOND] and R (for reformat] can end up with you text being reformatted all the way to the end. Paragraph end line returns can easily disappear, giving one mammoth paragraph to the end of the document.

One way round this is to put a special mark (for instance "*") at the beginning of each paragraph. Then when you transfer to LocoScript you just search out every * and replace it manually with a RETURN and [TAB]. It is also handy if you want to reformat your text in LocoScript. The file will come from the Z88 as a page image file (hard returns at the end of each line) and you will probably want to remove all these. You can do this and then easily find your paragraph breaks with the *s.

But it's better still if you have Protext. You can automatically FIND the *s and REPLACE them. Start by removing all returns R !. !32 A – literally replace all returns with a space. Then you enter R * !.!9 BA which automatically runs back through the file replacing the *s with a return and a tab. Finish by entering the command FORMAT or just FT to get everything looking neat again.

You can even put these commands into a special exec file (you can call it something like 'convert' and run it by typing EXEC CONVERT. or just X CONVERT.

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LISTINGS

Graphic traffic and solitary pursuits

GRAPHICS GENERATOR

by John Bilton

In October's 8000 Plus we showed you how to design and print out any graphic in BASIC, Protext or Mini Office. Now John Bilton has used Larry Simon's plot routines (August issue) to automate all this.

Run the program and make your design on a 32 by 16 grid. The cursors move a marker about the grid while F and E fill and empty squares. 'S' prints your design and 'D' prints DATA followed by the numbers required to form the character.

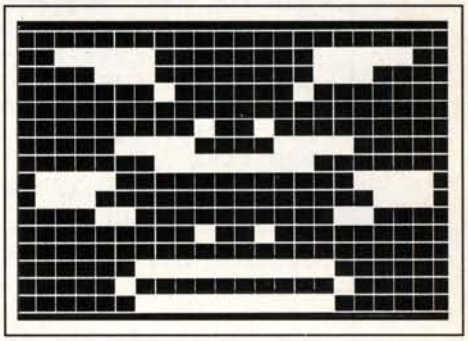
You can then use them in a BASIC listing:

```
10 odd$=CHR$(27)+"L"+CHR$(15)+CHR$(0)
20 even$=odd$
30 FOR j%=1 to 32:READ d%:odd$=odd$+
CHR$(d%):even$=even$+CHR$(d%):NEXT j%
40 DATA (nos. in the first data statement)
50 FOR j%=1 to 32 : READ d% : NEXT j%
60 DATA (nos. in the second statement)
70 LPRINT odd$; CHR$(27)+"J"+CHR$(2)
+CHR$(13); even$
```

This works for a graphic two characters wide. Do wider designs in parts. For a three double-characters width graphic, replace the '32' in lines 30 and 50 above by 96. The first DATA statement in the above would hold the first lines of numbers together from each DATA statement for the three parts of the graphic as determined by the listing below. The second would hold the three second lines of numbers put together.

To incorporate the graphics in a Protext document, put the stored command `>oc 27,76,32,` followed by the numbers of the first line. On the next line `>oc 27,74,2,13` then on the next `oc 27,76,32,` and the second lot of numbers. For a three double-characters width graphic, replace the 32s by 96s; run the figures from the first three lines of the DATA statements together for the first Protext line of codes, and the three second lines together for the second.

Similarly for Mini Office. The equivalent of '>oc' is [SHIFT][ALT]X; precede all digits by[ALT]. Build up large graphics line by line. ■



```
10 GOSUB 770:GOSUB 690                                                          0A40
20 x0=0:y0=40:xpos=30:ypos=55                                                   0CDD
30 DIM AX(64,16),t(64):PRINT CLS$;AOFF$;CUROFF$;BRIGHT$                         19E5
40 FOR z=1 TO 64:t(z)=0:NEXT z                                                  0D9F
50 FOR a=1 TO 64:FOR b=1 TO 16:AX(a,b)=0:NEXT b:NEXT a                          16E7
60 GOSUB 620:GOTO 100                                                           0956
70 IF AX(a%,b%)=1 THEN GOTO 100                                                 0C0F
80 f%=0:y%=eray:FOR x%=erax-7 TO erax+7:CALL plot(x%,y%,f%):NEXT                1CD5
90 x%=erax:FOR y%=eray-3 TO eray+3:CALL plot(x%,y%,f%):NEXT                     1E85
100 f%=1:y%=ypos:FOR x%=xpos-7 TO xpos+7:CALL plot(x%,y%,f%):NEXT               211D
110 x%=xpos:FOR y%=ypos-3 TO ypos+3:CALL PLOT(x%,y%,f%):NEXT                    1F6D
120 erax=xpos:eray=ypos                                                         0DAD
130 GOSUB 380                                                                   053F
140 k$=UPPER$(INKEY$):IF k$="" THEN 130                                         0E1A
150 num=INSTR("FESDA"+CHR$(6)+CHR$(1)+CHR$(31)+CHR$(30),k$)                     176B
160 IF k$="F" THEN GOTO 320                                                     0B3F
170 IF k$="E" THEN GOTO 310                                                     0B3D
180 IF k$="S" THEN GOTO 530                                                     0B88
```

1

```
190 IF k$="D" THEN GOTO 580                                                     0B54
200 IF k$="A" THEN GOTO 760                                                     0B3B
210 IF k$=CHR$(6) THEN xpos=xpos+20                                             109A
220 IF k$=CHR$(1) THEN xpos=xpos-20                                             109C
230 IF k$=CHR$(31) THEN ypos=ypos+10                                            1087
240 IF k$=CHR$(30) THEN ypos=ypos-10                                            108E
250 IF num=0 THEN PRINT BEEP$;:GOTO 130                                         11F1
260 IF xpos<30 THEN xpos=30                                                     0D5F
270 IF ypos<55 THEN ypos=55                                                     0DA8
280 IF xpos>650 THEN xpos=650                                                   0D5F
290 IF ypos>205 THEN ypos=205                                                   0D58
300 GOTO 70                                                                     046C
310 f%=0                                                                        0250
320 GOTO 470                                                                    04C1
330 FOR x%=xpos-9 TO xpos+9:FOR y%=ypos-4 TO ypos+4:CALL plot(x%,y%,f%)         264D
340 NEXT:NEXT                                                                   07C4
350 IF xpos<340 THEN xpos=xpos+20                                               1059
360 IF xpos>340 THEN xpos=xpos-20                                               1072
```

2

```
370 GOTO 100                                                                    04B5
380 IF ypos=65 OR ypos=85 THEN GOTO 430                                         120F
390 IF ypos=105 OR ypos=125 THEN GOTO 430                                       1309
400 IF ypos=145 OR ypos=165 THEN GOTO 430                                       1310
410 IF ypos=185 OR ypos=205 THEN GOTO 430                                       1320
420 a%=xpos/20-0.5:b%=ypos/20-1.75:c%=0.5:GOTO 440                              12B5
430 a%=32+xpos/20-0.5:b%=8+ypos/20-2.25:c%=0.5:GOTO 450                         1557
440 FOR z=1 TO b%-1:c%=c%+c%:NEXT z                                             0E6F
450 FOR s=1 TO b%-9:c%=c%+c%:NEXT                                               0DCD
460 RETURN                                                                      0511
470 IF f%=0 THEN GOTO 500                                                       0AA5
480 IF AX(a%,b%)=1 THEN GOTO 520                                                0C82
490 t(a%)=t(a%)+c%:AX(a%,b%)=1:GOTO 330                                         0F17
500 IF AX(a%,b%)=0 THEN GOTO 520                                                0C69
510 t(a%)=t(a%)-c%:AX(a%,b%)=0:GOTO 330                                         0F03
520 PRINT BEEP$:GOTO 130                                                        0B0B
530 LPRINT CHR$(27)+"@":bottom$=CHR$(27)+"L"+CHR$(32)+CHR$(0)                   19D1
```

3

```
540 top$=bottom$                                                                092E
550 FOR z%=33 TO 64:bottom$=bottom$+CHR$(t(z%)):NEXT z%                         1B6F
560 FOR z%=1 TO 32:top$=top$+CHR$(t(z%)):NEXT z%                                15CB
570 LPRINT bottom$;CHR$(27)+"J"+CHR$(2)+CHR$(13);top$;:GOTO 130                 1CA8
580 LPRINT CHR$(15);"DATA ":FOR z=33 TO 64:LPRINT t(z);",";:NEXT                1D54
590 LPRINT CHR$(27)+CHR$(10)                                                    0B9E
600 LPRINT "DATA ":FOR z=1 TO 32:LPRINT t(z);",";:NEXT                          1A45
610 LPRINT CHR$(18):GOTO 130                                                    0C62
620 f%=1                                                                        025A
630 FOR a=1 TO 17:y0=y0+10:y%=y0:FOR x%=20 TO 660:CALL plot(x%,y%,f%):NEXT x%:NE
XT a
                                                                                24B1
640 FOR b=1 TO 33:x0=x0+20:x%=x0:FOR y%=50 TO 210:CALL plot(x%,y%,f%):NEXT y%:NE
XT b
                                                                                246F
650 PRINT FNat$(2,0);REVON$;" F - FILL "                                        103E
660 PRINT FNat$(16,0);" E - ERASE ";FNat$(31,0);" S - PRINT SYMBOL "            1CA3
```

4

```
670 PRINT FNat$(53,0);" D - PRINT DATA ";FNat$(73,0);" A - ABORT ";             1962
680 a$=STRING$(90,95):PRINT FNat$(0,0);REVOFF$;a$;:RETURN                       1ABE
690 BEEP$=CHR$(7):AON$=CHR$(27)+CHR$(49)                                       111D
700 AOFF$=CHR$(27)+CHR$(48):CURON$=CHR$(27)+"e":CUROFF$=CHR$(27)+"f"            1A02
710 DARK$=CHR$(27)+"b"+CHR$(0)+CHR$(27)+"c"+CHR$(0):REVON$=CHR$(27)+CHR$(112)
                                                                                1DDA
720 DEF FNat$(x,y)=CHR$(27)+"Y"+CHR$(32+y)+CHR$(32+x)                           13DF
730 CLS$=CHR$(27)+"E"+CHR$(27)+"H"                                              0B4A
740 BRIGHT$=CHR$(27)+"b"+"?"+CHR$(27)+"c"+CHR$(0)                               0FA4
750 REVOFF$=CHR$(27)+CHR$(113):RETURN                                           1052
760 PRINT CLS$;AON$;CURON$;DARK$;REVOFF$;:END                                   16AE
770 MEMORY &HBFFF:plot=&HC000:A=PLOT                                            13A5
780 RESTORE 810                                                                 06FD
790 FOR F=0 TO 14:FOR G=0 TO 7:READ X$:X=VAL("&H"+X$):POKE A,X:A=A+1:NEXT:READ X
$:NEXT
                                                                                2845
800 RETURN                                                                      0507
```

5

```
810 DATA 0A,32,7C,C0,4E,23,46,21,250                                            0B95
820 DATA CF,02,A7,ED,42,D8,ED,43,4AF                                            0E11
830 DATA 78,C0,EB,5E,23,56,7A,A7,41B                                            0D03
840 DATA C0,93,3D,5F,ED,53,7A,C0,469                                            0D35
850 DATA F3,ED,73,7D,C0,31,9D,C0,51E                                            0DF5
860 DATA 01,36,C0,CD,5A,FC,E9,00,403                                            0CCA
870 DATA ED,7B,7D,C0,FB,C9,2A,7A,50D                                            0E0E
880 DATA C0,29,11,00,B6,19,5E,23,24A                                            0C9A
890 DATA 56,7B,E6,F8,CB,27,CB,12,47E                                            0E00
900 DATA 47,7B,E6,07,B0,5F,2A,78,360                                            0CCA
910 DATA C0,45,7D,E6,F8,6F,EB,19,4D3                                            0DDB
920 DATA 78,E6,07,3C,47,AF,37,1F,2ED                                            0D94
930 DATA 10,FD,47,3A,7C,C0,A7,20,391                                            0CE1
940 DATA 05,78,2F,A6,77,C9,3D,78,347                                            0CC8
950 DATA 20,03,B6,77,C9,AE,77,C9,407                                            0C91
```

6

SOLITAIRE

by Leslie Cowley

This is a rather attractive implementation of the old fashioned game of patience, Solitaire. On running the program a graphic representation of the solitaire board fills the screen and a prompt asks for your moves.

To play Solitaire you must take marbles from the board by leaping over an adjacent piece into an empty square. The aim of the game is to get down to a solitary marble in the centre of the board.

There are apparently a great many solutions. If anyone knows the actual number we'll pass it on.

```
5 REM  ****************************************                    084D
6 REM  **   SOLITAIRE  By  L.Cowley  1988   **                    0FBB
10 REM ****************************************                    08DB
20 FOR n=&HC070 TO &HC098:READ d:POKE n,d:NEXT                      1547
30 DATA 243,62,129,211,241,62,130,211,242,175,95,103                0F05
40 DATA 22,184,58,153,192,111,41,41,41,25,17,154                    0DDE
50 DATA 192,235,1,8,0,237,176,62,133,211,241,62                     0DF6
60 DATA 134,211,242,251,201                                         086D
70 RESTORE 110:FOR n=1 TO 8:POKE &HC099,199+n                       13C6
80 FOR outpt=1 TO 8                                                 0917
90 READ numb:POKE &HC099+outpt,numb                                 12A1
100 NEXT outpt:c=&HC070:CALL c:NEXT                                 124F
110 DATA 0,0,0,3,15,31,63,63,0,31,255,255,255,255,255,255,0,248     120A
120 DATA 255,255,255,255,255,255,0,0,0,192,240,248,252,236          10EF
130 DATA 63,63,31,15,3,0,0,0,255,255,255,255,250,255,31,0,255       111E
140 DATA 255,255,255,250,175,248,0,236,236,216,176,192,0,0,0        1131
150 DEFINT a-z:DIM post(33,1):DIM peg(33)                           123F
160 FOR a=1 TO 33:peg(a)=1:READ post(a,1):READ post(a,0):NEXT:peg(17)=0   1F86
```

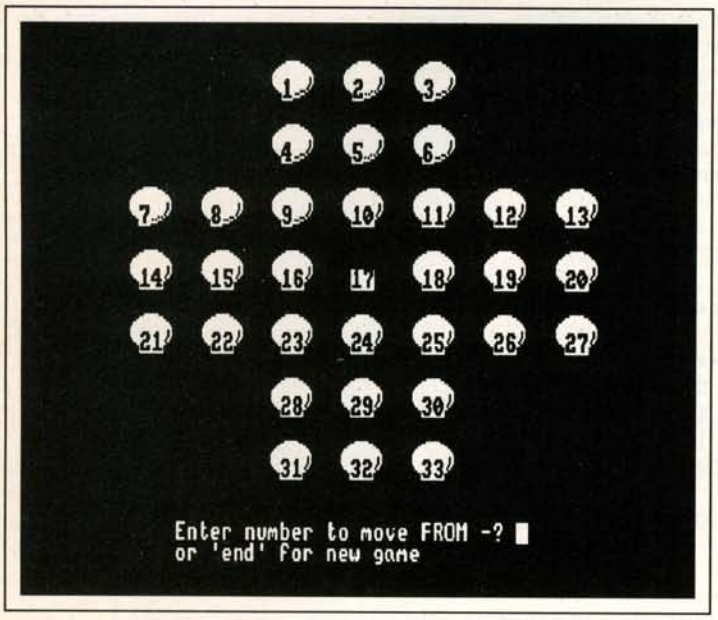
1

```
170 bell$=CHR$(7):revon$=CHR$(27)+"p":revoff$=CHR$(27)+"q"          1997
180 DEF FNpo$(x,y)=CHR$(27)+"Y"+CHR$(32+y)+CHR$(32+x)               13FE
190 PRINT CHR$(27)+"E"+CHR$(27)+"H"                                 0BC7
200 RESTORE 460                                                     06E5
210 FOR loop=1 TO 33: acr=post(loop,1):dwn=post(loop,0)             1BA2
220 IF peg(loop)=0 THEN GOSUB 450 ELSE GOSUB 440                    16AA
230 numb=loop:GOSUB 520:NEXT                                        0FA3
240 PRINT FNpo$(1,24)CHR$(27)+"J"                                   0C56
250 PRINT FNpo$(27,26)"or 'end' for new game"                       13D8
251 PRINT FNpo$(27,25)"Enter number to move FROM -";                18FE
252 INPUT fm$:IF LOWER$(fm$)="end" THEN RUN                         12FF
253 IF fm$<"1" OR fm$>"9" OR VAL(fm$)<1 OR VAL(fm$)>33 THEN PRINT bell$:GOTO 240
                                                                    20C3
260 fm=VAL(fm$):IF peg(fm)=0 THEN PRINT bell$:GOTO 240              191A
270 PRINT FNpo$(27,28)"Enter number to move TO -";:INPUT tw$        1D93
272 IF tw$<"1" OR tw$>"9" OR VAL(tw$)<1 OR VAL(tw$)>33 THEN PRINT bell$:GOTO 240
                                                                    2227
280 tw=VAL(tw$):IF peg(tw)=1 THEN PRINT bell$:GOTO 240              1A64
```

2

```
290 te=ABS(fm-tw)                                                   075E
292 IF te=2 OR te=8 OR te=12 OR te=14 THEN peg(fm)=0:peg(tw)=1:GOSUB 490 ELSE PR
INT bell$:GOTO 240
                                                                    2E5D
300 te=fm-tw                                                        05CD
310 IF te=2 THEN IF peg(fm-1)=1 THEN peg(fm-1)=0:g=fm-1:GOSUB 500:GOTO 240207D
320 IF te=-2 THEN IF peg(fm+1)=1 THEN peg(fm+1)=0:g=fm+1:GOSUB 500:GOTO 240
                                                                    20F5
330 IF te=8 THEN IF peg(fm-5)=1 AND fm<14 AND tw<14 THEN peg(fm-5)=0:g=fm-5:GOSU
B 500:GOTO 240
                                                                    298B
340 IF te=-8 THEN IF peg(fm+3)=1 AND fm<14 AND tw<14 THEN peg(fm+3)=0:g=fm+3:GOS
UB 500:GOTO 240
                                                                    2969
350 IF te=-12 THEN IF peg(fm+5)=1 AND fm<21 AND tw<21 THEN peg(fm+5)=0:g=fm+5:GO
SUB 500:GOTO 240
                                                                    2AA1
360 IF te=12 THEN IF peg(fm-7)=1 AND fm<21 AND tw<21 THEN peg(fm-7)=0:g=fm-7:GOS
```

3



How to type in a listing

Load up Mallard BASIC – to do that, insert your CP/M disc, reset the machine and at the A> prompt type BASIC[RETURN]. Now you see the 'Ok' prompt. Just type in the lines of the listing exactly as they are printed on the page (but not the numbers on the extreme right). Type LIST at any time to print out your typing so far to the screen; if you want a printout to pore over, type LLIST.

Mistakes made before you press RETURN can be corrected with the DEL keys, otherwise you have to use the line editor. Suppose you've made a mistake in line 100; type EDIT 100 and then you can use the cursor keys and DEL keys to correct it. Press RETURN when the line is OK. To delete a line, type its number only and press RETURN.

When you've finished, save the program to a disc by the command SAVE "FRED (or any other suitable name of eight letters or less). To run the program, type RUN.

Programs rarely run first time, but when BASIC encounters a mistake it tells you where it is. 'Syntax Error in line 60' means a mistake in that line (though the actual typing error may have occurred in a previous line, causing problems in this one). Other error messages can often occur too. Use the EDIT command to correct it.

You can rerun the program another day by loading BASIC up as before and, with the disc on which you saved the program in the drive, typing LOAD "FRED and then RUN.

```
UB 500:GOTO 240
                                                                        29B0
370 IF te=14 THEN IF peg(fm-7)=1 THEN peg(fm-7)=0:g=fm-7:GOSUB 500:GOTO 240
                                                                        2170
380 IF te=-14 THEN IF peg(fm+7)=1 THEN peg(fm+7)=0:g=fm+7:GOSUB 500:GOTO 240
                                                                        2285
390 IF te=-12 THEN IF peg(fm+7)=1 THEN peg(fm+7)=0:g=fm+7:GOSUB 500:GOTO 240
                                                                        227E
400 IF te=12 THEN IF peg(fm-5)=1 THEN peg(fm-5)=0:g=fm-5:GOSUB 500:GOTO 240
                                                                        2141
410 IF te=-8 THEN IF peg(fm+5)=1 THEN peg(fm+5)=0:g=fm+5:GOSUB 500:GOTO 240
                                                                        2134
420 IF te=8 THEN IF peg(fm-3)=1 THEN peg(fm-3)=0:g=fm-3:GOSUB 500:GOTO 24020B0
430 peg(fm)=1:peg(tw)=0:GOSUB 510:PRINT bell$:GOTO 240                  1B15
```

4

```
440 PRINT FNpo$(acr,dwn)CHR$(200);CHR$(201);CHR$(202);CHR$(203)          1A28
441 PRINT FNpo$(acr,dwn+1)CHR$(204);CHR$(205);CHR$(206);CHR$(207):RETURN 2043
450 PRINT FNpo$(acr,dwn)CHR$(32);CHR$(32);CHR$(32);CHR$(32)              18CF
451 PRINT FNpo$(acr,dwn+1)CHR$(32);CHR$(32);CHR$(32);CHR$(32):RETURN     1E2F
460 DATA 35,3,41,3,47,3,35,6,41,6,47,6,23,9,29,9,35,9,41,9,47,9,53,9     1387
470 DATA 59,9,23,12,29,12,35,12,41,12,47,12,53,12,59,12,23,15,29,15,35   1403
480 DATA 15,41,15,47,15,53,15,59,15,35,18,41,18,47,18,35,21,41,21,47,21  1488
490 acr=post(fm,1):dwn=post(fm,0):GOSUB 450:acr=post(tw,1)               1CE7
492 dwn=post(tw,0):GOSUB 440:numb=fm:GOSUB 520:numb=tw:GOSUB 520:RETURN  264B
500 acr=post(g,1):dwn=post(g,0):GOSUB 450:numb=g:GOSUB 520:RETURN        22CC
510 acr=post(fm,1):dwn=post(fm,0):GOSUB 440:acr=post(tw,1)               1CCB
512 dwn=post(tw,0):GOSUB 450:numb=tw:GOSUB 520:numb=fm:GOSUB 520:RETURN  269A
520 acr=post(numb,1):dwn=post(numb,0):PRINT revon$:a$=STR$(numb)         22F4
522 b$=MID$(a$,2,1):IF MID$(a$,3,1)<>" " THEN b$=b$+MID$(a$,3,1)        13EE
530 PRINT FNpo$(acr+1,dwn+1);b$:PRINT revoff$:RETURN                     1B12
```

5

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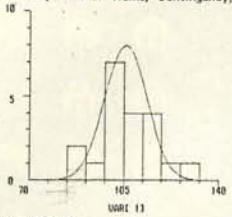

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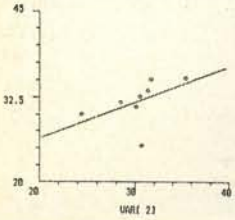

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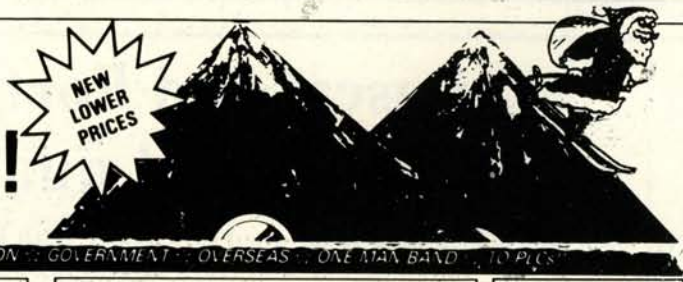

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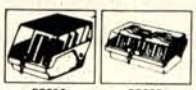

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TIP OFFS

More plain sailing tips

Sinking in a sea of confusion or merely becalmed in a Sargasso of seething uncertainty? Here is a safe harbour in which to recover in the company of those who have dived the same seas and returned with a few pearls of wisdom. If you've opened up a few of your own, tell us at *TipOffs, 4 Queen St, Bath BA1 1EJ.* You could take away £30! This month's thirty smackers go to Mark Fullerton of Merseyside for his smart way of exporting spreadsheet information from Mini Office...

Jolly japes

To annoy a PCW owning friend, when they're in CP/M, type [EXIT]X at the A> prompt.

To put them out of their misery restore their PCW to normality by typing [EXIT]0 (that's zero, not O).

Rose Bilany
Bath

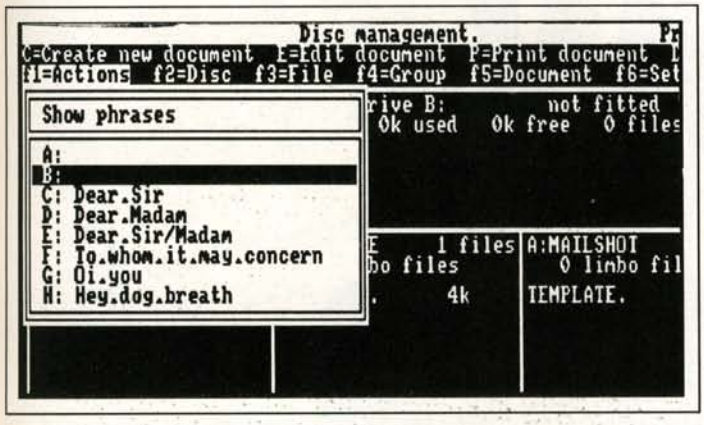
Empty words

LocoScript 2 can store as many sets of phrases as you want. The only irritation is having to delete the existing phrases loaded in when the PCW starts up to make space for long new ones.

So, when you want to store new phrases, delete all the old ones by loading in a set of empty phrases. ([f1] in the disc manager 'Load phrases'). Create such a set EMPTY.PHR say as follows.

Press [f1] in the disc manager and 'Show phrases'. Delete each phrase in turn by moving the cursor onto it and pressing [-]. 'Save' the now empty phrase file with a new name, eg. EMPTY.PHR.

Sandra Gentry
Croydon



Is it serious DR

Running DR draw as per the instructions means constant changes of disc. DR Draw fails to take advantage of the extra memory on 8512s and 9512s.

This can be overcome by producing a startup disc with side one containing a PROFILE.SUB that copies the following programs into Drive M: BEEP.COM DDFXHR8.PRL DDSCREEN.PRL DRAW.COM DRAW.SUB GSX.SYS ASSIGN.SYS PIP.COM DRMSG80.TXT SETDEF.COM

Side two of the disc contains the nine DRAW files and the three FONT.BIN files. When PIP has done its work and the A> returns turn the disc over and type M:[RETURN] then PIP[RETURN] followed by M:=A:*.* – all the files on side two are copied to Drive M.

To start the program type DRAW.COM. It works quite quickly from M, no disc changes are necessary and picture files are saved to a disc in A.

John Garwood
Yorkshire

Spread it about

One of the few shortcomings of the Mini Office spreadsheet is its inability to produce output usable in a word processor or in BASIC (eg. to sort into alphabetical order). But there is a solution.

It involves PUT.COM. This is on side three of your CP/M discs or on your CP/M disc on a 9512.

Start with a blank formatted disc and copy PUT.COM onto it and then copy OFFICE.COM and SHEET.COM from your Mini Office suit onto the same disc. (Insert your CP/M disc – side 2 on the 8000s – and type PIP[RETURN]. At the asterisk insert side 3 of the CP/M discs if you have an 8000 and type M:=A:PUT.COM [RETURN]. Then insert the Mini Office disc and type M:=A:OFFICE.COM[r][RETURN] followed by M:=A:SHEET.COM[r][RETURN] and M:=A:*.SPR[RETURN] to copy all the spreadsheets you've created. Next insert your blank formatted disc and type A:=M:OFFICE.COM[r][RETURN], A:=M:SHEET.COM[r][RETURN], A:=M:*.SPR[RETURN] and A:=M:PUT.COM[RETURN]). [STOP] finishes.

With this disc in drive A: and the A> prompt showing type A>PUT PRINTER TO FILE ANYNAME.DOC. (or any other name you like).

After the subsequent message confirming your command type OFFICE selecting the spreadsheet.

Load your spreadsheet file as per normal and view it to make sure calculation takes place and then either edit it if you wish or return to the main menu.

If you only want a part of

For Tetris widow(er)s

If you think your partner is playing 'Tetris' too much, put your name in the high score table as things like [EXIT]X. The printing positions on screen go haywire, ruin gameplay until you start from scratch again, and should persuade your partner to finish off at last and go to bed.

Emma Cooper
Epsom

What's afootnote

Everyone produces academic papers books or technical reports knows how tedious footnotes are. There are two main problems. First producing consistent presentation of the references. The main hassles here are things like remembering to put a comma after the authors surname etc. Second is the tedium of having to go through renumbering all the footnotes when you decide to add or delete perhaps only a single note. Tipoffs in issue 24 (Sep 88) showed how to do footnotes in Mini Office, Protext and LocoScript.

If you have LocoMail, you can get your numbering done automatically. First of all, where possible, list the references themselves in a separate document. These pages can be numbered to follow on from the main text document using the Disc Manager [f5] process. By using a suitable LocoMail loop with appropriate prompts, you can arrange for the document to ask for information and then insert consistent punctuation automatically. The details of this depend upon your chosed style but the Locomail user guide contains examples of other Locomail applications which can be easily adapted to this purpose.

Second, instead of putting in a number each time you add a note, make a phrase of the following under F and paste the phrase in instead: `(+SupeR)(+Mail)+F(-Mail)(-SupeR)`. This can be added to the PHRASES.STD file and loaded with your startup disc.

Then add to the beginning of the document (or store in your template for this type of document) the following Locomail command: `(+Mail)F=0(-Mail)`

When you've finished the document, make a copy of it using [f3] and then fill the copy using F. LocoMail will now increment and then print the superscripted number every time it meets a +F inside mail codes. When LocoMail has finished choose the 'save result' option from the menu.

If you now need to add or delete footnotes, instead of changing all the numbers, simply make the relevant changes in the original unfilled document, adding or deleting the +F's as required.

Copy the document again and fill the copy. The footnotes are renumbered for you. Keep the references themselves in a separate file; update them similarly.

To number footnotes across different documents, the initial command is `(+Mail)F=6(-Mail)` or whatever other number to start at. Locomail isn't just junkmail!

Ian Ground
Heaton, Newcastle upon Tyne

File type

Here is a good way to get a quick list of what's on your discs in CP/M. Press [ALT]P (it beeps to confirm) to send screen output to the printer and then type `disc 1`, or whatever you call your discs (it mustn't be a file name).

Now type `DIR` and watch all the file names print out. Repeat this for as many discs as you like and then press [ALT]P again to stop this 'printer echo' (the PCW confirms this by *not* beeping!) You now have a printed list of the current state of your discs.

Donald Sawyer
London

What a ham

Radio amateurs send each other QSL cards to confirm contacts. These are usually printed out on thin card. Because the PCW can't print in the top six lines you can't fit two on an A5 sheet this means making the cards smaller or wasting a lot of card. If, however, you put twenty or so carriage returns first before beginning printing, you can then take the sheet out and feed it in the other way around before repeating the process. There is now little wasted card. This technique can be used in other similar situations.

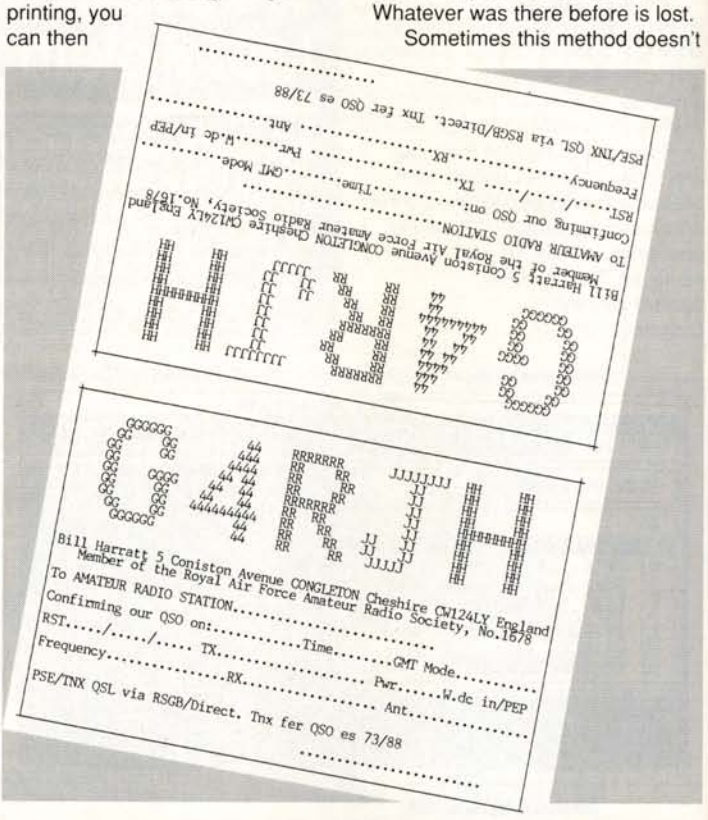
CW Harratt
Cheshire

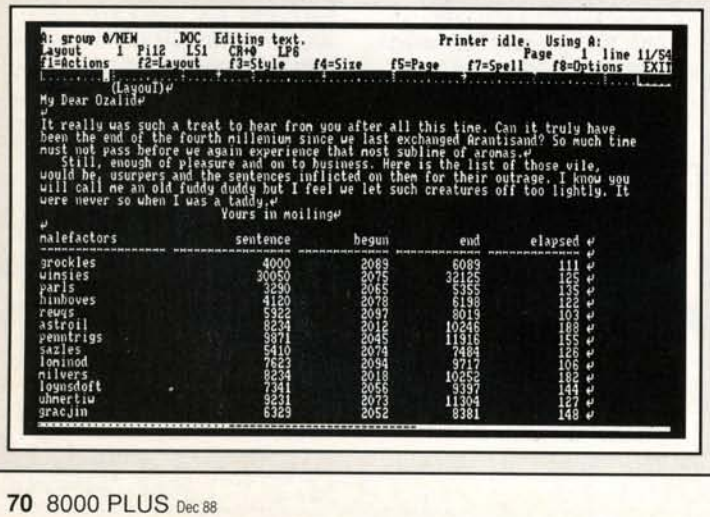
Hold the front page

In Stop Press you can take a 'snapshot' of whatever is displayed on the screen and move it into the Canvas area. The image can then be processed or saved as a cutout.

Load in the screen you wish to copy, press [PASTE] then the Cancel key on the mouse or the [9] on the keypad. The screen should now be copied into the Canvas. Whatever was there before is lost.

Sometimes this method doesn't





the spreadsheet then select the Alter Spreadsheet menu. Go into the Print Spreadsheet menu and select the required settings (you'd normally select 'None' headings) and finally either Print whole sheet or Print Window.

Now the interesting stuff happens. The printer will remain silent but the disc will whirr as the PUT utility redirects all the output which should have gone to the printer and sends it to disc instead.

When the disc stops and the lights go out quit the spreadsheet, [EXIT] to CP/M and at the A> type `PUT PRINTER OUTPUT TO PRINTER` to restore normality.

Go into the word processor of your choice. Simply load the file ANYNAME.DOC (or whatever you called it) and the spreadsheet appears. The garbage at the beginning and end can be deleted. In LocoScript, you have to 'Insert text' into an existing Loco document (while editing press [f1] in Loco 2, [f7] Loco 1, then select ANYNAME.DOC from the disc management screen).

Mark A. Fullerton
Merseyside

"An extra PCW for just £25*"? Well, almost.

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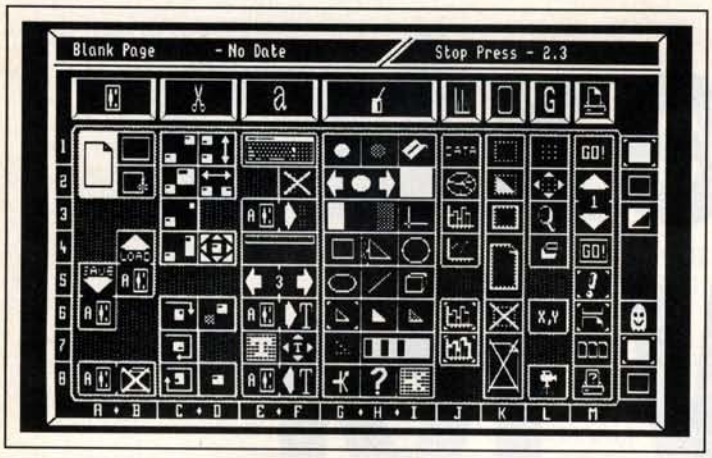


work, for example when you are using the pattern designer. The following procedure then copies the screen: move the mouse over the 'exit' icon then press 'execute', 'paste', 'execute'. Sometimes the [COPY] key next to [PASTE] should be used.

Stephen Agate
Surrey

What a card

Forgotten a birthday or Christmas card? You can knock up jokey home-made cards on a PCW if you have a graphics program or a desktop publisher. Even Loco-Scripters can try something.

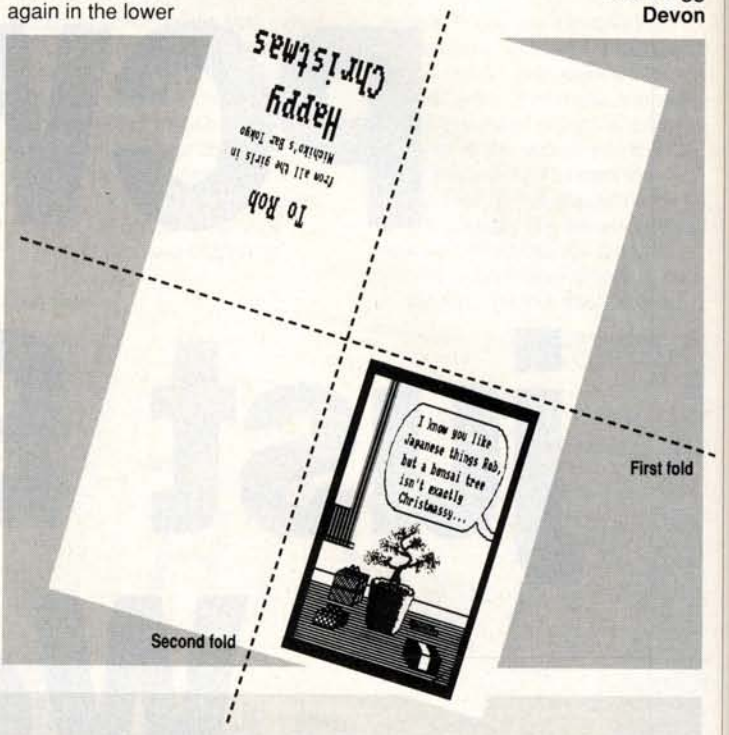
Make a design on a sheet of A4 with the paper split into four equal sections. In the bottom right quarter put the design to go on the front of the card. You can make it suitably sincere, humorous or insulting. In the top left put the text message upside down.

How you achieve it depends on the package you have. In Stop Press you can prepare the cover and rotate it to the correct section of the page, put the text and print out the whole thing in one go. Otherwise you'll probably have to print the first quarter, reinsert it to face the same way as before and print the second quarter.

In Electric Sudio's Art you have to prepare the cover and inside message separately. In LocoScript you can try building up a design from the characters in Loco 2's extensive set, use Lococharacter etc. End the page with [ALT][RETURN] and on the new page do your message again in the lower right-hand quarter. Print the first page, re-insert the piece of paper upside down and facing the same way as before, and print the second page.

After you print out, fold it in half horizontally, then vertically: hey presto! If you have coloured A4 paper then so much the better.

Basil Pigg
Devon



The key facts

BASIC users can make things much easier for themselves by using SETKEYS to redefine the keyboard. With the following set up you just type `SETKEYS BASIC.KEY` before going into BASIC, then commands like LIST, RUN etc. can be done with one key.

Load up CP/M as usual, type `BASIC`[RETURN] then at the Ok prompt `RUN "RPED`[RETURN]. Insert your BASIC work disc and select 'new screen'. Give the name as BASIC.KEY. In the screen that then appears type the following. You can use the cursors and delete keys as normal and [CAN] removes lines. [EXIT] to finish. The ^ (up arrow) is [EXTRA]`U`.

```
12 N "^'#82'" PAGE=list
27 E "^'#85'" EXTRA P=print
35 E "^'#88'" EXTRA I=input
36 E "^'#8D'" EXTRA L=lprint
3  N "^'#9A'" PASTE=BASIC
4  N "^'#90'" PARA=dir
11 N "^'#86'" COPY=print file
51 E "^'#9B'" EXTRA T=then
59 E "^'#9C'" EXTRA W=while
7  N "^'#9D'" grid key=cont
75 N "^'#9E'" CAN=wipe screen

E #82 "LIST ^M"
E #85 " PRINT "
E #88 " INPUT "
E #8D " LPRINT "
E #9A "BASIC ^M"
E #90 "DIR ^M"
E #86 "PIP LST:="
E #9B " THEN "
E #9C " WHILE "
E #9D "CONT ^M"
E #9E "TYPE C^M"
```

Now type `SYSTEM`[RETURN] and at the A> prompt insert your CP/M disc and type `PIP`[RETURN]. Insert your BASIC work disc and type `A:C=CON:`[RETURN] then carefully press [EXIT] then `E` then [EXIT] then `H` then [ALT]`Z`.

Continue in normal BASIC or CP/M. Now you find that:
(1) [CAN] clears the screen
(2) [COPY] prints out (on the printer) any file whose name you type if PIP is on the disc.
(3) [PARA] gives a directory in CP/M or print DIR in a listing.
(4) [PAGE] lists the BASIC file currently in memory or inserts LIST in a line of BASIC.
(5) [PASTE] will run BASIC from CP/M if BASIC is on that disc.
(6) The key in the middle of the cursors continues a program which has been stopped by [STOP]. All the variables resume activity at the values they had.
(7) Pressing [EXTRA] with W,T,I,P or L in BASIC will insert WHILE, THEN, INPUT, PRINT or LPRINT in the line you are writing.

If you only want some of the functions above, you can leave out the ones you don't want. Leave out lines paired by the numbers after the # sign: if you're not bothered about [PAGE] producing the word LIST for example, leave out the line 3 N "^'#9A'" PASTE = BASIC and the line E #9A "BASIC ^M".

To customise it to your own needs, proceed as follows. Suppose you want [EXTRA]`R` to produce RUN[RETURN]. Looking at your CP/M manual page 109 (page 544 if you have a 9512) you see that the number associated with the R key is 50. Select one of the items in the list above you don't want; say [COPY] printing out a file. Run up RPED as before but select 'edit existing screen' giving BASIC.KEY as the screen to edit. Using cursors and delete keys go down to the appropriate line (the 'print file on copy' line) and change the 11 (looking at the CP/M manual again you see that 11 is associated with [COPY]) to 50, and change the N (for normal) to E (for extra). As it stands now, pressing [EXTRA]`R` will produce `PIP LST:=` – you must also change the line 'E #86 "PIP LST:="' as well. (E #86, because that's the number in the line just changed).

Change it to `E #86 "RUN^M"` – the up arrow and M represents a press of the [RETURN], so if you just wanted the word RUN typed without a [RETURN], miss that bit out. If you want a double quote to be reproduced, type it in as ^".

You can do this for any combination of [SHIFT], [EXTRA] and [ALT] with any key to produce any string you like. Replace the N in the above by S, E or A respectively, the 11 by the appropriate number associated with the key you require as shown in the CP/M manual, and the string in the right E #(something) line to the text you want – remembering that up arrow-M if you want a [RETURN]. The text at the right hand side of those first eleven lines is purely comment and is ignored; you can put nothing if you like.

[EXIT] saves the amended version of BASIC.KEY. Running one setkeys file after another can result in odd happenings; it's best to restart from scratch. There's also a limit to the length of messages you can put in the 'expansion tokens' in the list of E's.

Robin Allot
Seaford

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'DOUBLE T' PATIENCE

TT Patience offers SIX games of Playing Card Patience for all PCW owners, Four of the games are not widely known and include " KUALA LUMPER", a thinker's game, thus named because it was the major pastime of the British Governor of KL prison when interned in his own camp during World War II.

STOP PRESS

NEW! Available from Thurston Techniques Qualified F.Ed., teacher Brian Thurston, has now completed new disc tutorials for Minerva Software. LernLoco2 for LocoScript 2 £24.95 (Teaches LocoScript within LocoScript) TypeRite2 for LocoScript 2 £24.95 (Touch typing tutorial within Locoscript) (State 8256 or 9512 when ordering) LAUNCH OFFER Christmas spirit begins here: order TypeRite 2 or LernLoco2 before December 1st and claim a FREE Page Boy word processing ruler.

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VISA

These pages provide a comprehensive guide to the Amstrad PCW software. Published in three monthly parts, this time it's the turn of Databases, Education, Communications and Programming packages to face the ultimate test. We've set out to cover every important piece of software we could lay our hands on, and to give you enough information to decide whether they are suitable for you.

The software listed here represents what we consider to be the best of the many programs available. As well as a brief summary of what they do, the main Plus and Minus points for each program are listed – Pluses have a ▲ by them, and Minuses a ▼. Those we think are particularly noteworthy have a flash on them.

To the best of our knowledge, all the programs here should run on both 8000 series machines and the 9512.

•DATABASES•

There are broadly two different types of database, and which suits you best depends, of course, on what you want it for.

Firstly there's the simple card index substitute. For many home users, this will be the kind of thing you want – all it does is store your address book or stock items so that you can easily look them up.

A more sophisticated option is the programmable database. With these, in addition to allowing simple card index retrieval there is a command language which allows you to analyse the data on the cards. For example, you could automatically add up the money owed to you by all your customers from Yorkshire. To make best use of this kind of facility, you will need to be able to understand a little programming, although it's not too hard really.

A bit of jargon now. A database is said to consist of records – this is just like a card in a conventional card file, with all someone's details on it. Each record is composed of fields – a field is a single entry on a card, like someone's name, or age, or postcode.

The thing that makes a database special is an index. You might be able to hold your address book as a simple list in a word processor document, but if it gets large then this becomes unwieldy. An index means that the database has worked out which order records should be in, so it can go straight to the one you want without looking at lots of others first.

The field that you use as your index (e.g. someone's surname) is said to be a key field, and can be looked up very fast compared to "non-key" fields. A good database will allow multiple keys, meaning that it can look up data just as fast for a variety of types of information.

MASTERFILE 8000

£49.95 • Campbell Systems • 0378 77762/3

A specially written PCW version of the successful database sold on other Amstrad computers. It is fully menu controlled, and makes good use of the PCWs special screen and keys. It can deal with up to 8 separate data files at once, so can cope with relational databases. Screen (but not printed output) can be elaborately laid out with boxes, lines etc.

PLUSES • MINUSES

- ▲ Works fast
- ▲ Wide range of Layout options
- ▲ Handles 'relational' files
- ▲ Plenty of good example files
- ▲ Can do arithmetic calculations within its records
- ▼ Capacity limited by size of M drive – best on an 8512
- ▼ Takes a while to learn all the features

ATLAST

£39.95 • Rational Solutions • 0566 81511

Recently released revised version with new manual and a new price, Atlast Plus is a full featured database that is excellent value for money. It does what Cardbox did, with much better reporting facilities, and can sort too. You can do simple totalling of columns, but not general arithmetic on fields in a record. Its claims to be a true 'relational' database like dBase II are a little grandiose, but a good general purpose database – recommended.

PLUSES • MINUSES

- ▲ Good screen editing facilities
- ▲ Constants enable insertion of repetitive data.
- ▲ Good on storage space – ideal for 8256 owners
- ▲ Handles names and addresses well.
- ▼ Still no arithmetic calculation in field
- ▼ Setting up the database is at first confusing – function of 'SYS' file unclear
- ▼ Good but not that good

CAMBASE II

£49.95 • Cambrian Software • 0766 831878

New version of the old favourite PCW database. Most important change is the Copy Filespec facility. You can set up a new database with potentially more entries than you've made provision for using the information from the original database. You can also change the fields to suit another set-up.

PLUSES • MINUSES

- ▲ Quick and efficient to use
- ▲ You can set up a database blueprint (Filespec) which you can test thoroughly before entering data
- ▲ Includes powerful features like conditionals, loops, field validation, and specified layouts
- ▲ Simple parts of the program are well-covered in the manual
- ▼ Can't use the memory - bad news for 8256 users
- ▼ You have to guess how to use the advanced features
- ▼ Not much room for prompts
- ▼ Tendency to crash occasionally in Filespec

MINI OFFICE PROFESSIONAL

£29.95 • Database Software • 0625 878888

Mini Office is a suite of five integrated programs – database, word processor, spreadsheet, graphics module and comms package. The database is a pretty standard card index type, similar to First Base. Good range of selection operations and arithmetic on fields. Can sort over a combination of fields and print out a variety of smart layouts, and you can have up to 255 fields! Of course you're getting four other very good programs as well. The big problem is that you can't import data, so any data you already have must all be re-entered. No export either.

PLUSES • MINUSES

- ▲ Easy to use and intuitive
- ▲ Can use the data in the word processor
- ▲ Powerful selection and sort facilities
- ▲ Arithmetic on fields
- ▲ "Test print" facility lets you check your labels will print OK
- ▲ One command makes global changes, ie. all '£3.50' to '£5'
- ▼ Can't import or export data
- ▼ Manual is of very little use

CHIBASE

£49.95 • Chiasma • 06333 60996

A 'free format' database, which means you don't have to go

through the usual rigmarole of defining your record format before you can enter your data. Instead, you just type text into Chibase, mark the words to be indexed, and it can then treat that file as a database.

PLUSES • MINUSES

▲ Doesn't require you to set up a preset 'record' card
▲ Searches through your data very quickly
▲ Allows you to select up to 50 keys for each page of text
▲ Allows editing of text without a word processor
▼ No sample file for you to learn on

DELTA

£99.99 • Compsoft • 04868 25925

Delta is another of the heavyweights, like dBase II and Condor, but unlike them is fully menu driven. Although the screen layouts are fully flexible, there is a default "quick" layout so you don't have to sweat at defining your own. It could use better record indexing facilities. Particularly good for writing applications, once you have ploughed through the large manual.

PLUSES • MINUSES

▲ Records can contain up to 90 fields, plus groups of fields that may be repeated
▲ Screen layout can be user defined, or "quick" mode used
▲ Single-page letter writer provides detailed mail-merge
▲ Processes can be defined, and run from user defined menus, for ease of use by others
▲ Very full, and quite readable, manual
▼ Only one field may be used for indexing
▼ Very big program – a PCW8256 would be hard pushed
▼ Some of the menu operations are unforgiving to errors

POCKET INFOSTAR

£69.50 • MicroPro/DRA • 0386 841181

Consists of two large programs, DataStar and ReportStar (both available independently). DataStar is a conventional database, with screen card layout and indexing. ReportStar then generates the printed output, either from DataStar or CalcStar files. Powerful if you can use them, but the suite is horrifically overcomplicated, and the documentation just incomprehensible.

PLUSES • MINUSES

▲ DataStar is a quite good database with indexing and calculated fields.
▲ "Transaction processing" feature allows cross-referencing of data files.
▲ Can be integrated with other Pocket products, eg WordStar.
▲ Can take up to 255 fields per record
▼ Two-volume manual set is very badly organised.
▼ There are separate programs to run for form design, data entry and reporting.
▼ Operation is all by obscure command keys, à la WordStar.

CARDBOX-PLUS

£99.95 • Business Simulations • 0892 863105

Business Simulations are the company who actually wrote the successful Cardbox database, and they are the sole distributors of their enhanced version Cardbox-Plus. Disappointingly, still no field totalling facilities, but it does boast sorting, index listing, disc management and an autosave feature as extras to Cardbox. The ultimate straight card index, if you have the money.

PLUSES • MINUSES

▲ All the facilities of the very successful Cardbox
▲ Cards can be sorted into order for browsing and printing
▲ "Autosave" regularly stores the data to disc in case of mishap
▲ Files created by Cardbox can be read
▲ Full and good manual, although the tutorial is at the end
▼ Still no way of performing numeric calculations
▼ A lot to pay for a few frills to the basic Cardbox

DBASE II

Powerful

£99.00 • Ashton Tate/First Software • 0628 3312

The WordStar of database packages. Recently licensed "cheaply" for Amstrad machines, dBase II is a market leader in business computing. As you would expect, this means it is very powerful but very complex. It has a procedure language to allow you to write programs to manipulate the data, and you can construct index files for really fast access to large databases. If you can make the effort to learn it, it'll serve you well.

PLUSES • MINUSES

▲ Powerful command language for customised programs
▲ Indexing facility makes large databases fast to handle
▲ Can handle very big databases
▲ The data can be fairly easily altered after its entry
▼ Manual is daunting (but there are plenty of independent books on the market)
▼ Can't easily alter the screen record layout
▼ An expensive package, you still only get 32 fields per record
▼ Generally unfriendly unless you have some programming skills

FT=DB

£29.95 • Encyclasoft • 0270 811868

A free form database like Chibase, but instead of typing your text into the database itself, you create it on a wordprocessor first of all. Once done and edited to your liking, you mark all the words you want to be used as keywords (still in your word processor) and then read it into FT=DB. Now you can treat it as a database, compile indexes, search for phrases and so on, all quite efficiently.

PLUSES • MINUSES

▲ Easy to use
▲ Versatile retrieval system over several text files
▲ Inexpensive
▲ Can move between index and text at will
▼ No editing facilities within FT=DB

FIRST BASE

Easy to use

£29.95 • Minerva • 0392 37756

Billed as a simple database for the first time user, First Base is quite a competent cheap card index. The manual is computer printed, and weak on diagrams which doesn't help things. One weakness is getting printed results out of First Base – either you settle for crude lists, or you have to create a template in LocoScript which is awkward to do. But overall, for simple applications and beginners, it's pretty good value for money.

PLUSES • MINUSES

▲ Can alter the index field at any time
▲ Simple to use screen editing makes data entry easy
▲ Good value as a simple card index lookup system
▲ Easy to browse through picking out a set by hand
▼ Manual is badly laid out and generally difficult
▼ Producing printed output is awkward

SMARTCARD

£59.95 • Focus Computers • 0272 420109

A conventional card index database which is now the nearest thing available to Cardbox . Small and fast, you can sort the records index up to three fields and do simple arithmetic in fields. Can't put background text (eg. titles) on records or printouts.

PLUSES • MINUSES

▲ Good clear screens
▲ Plenty of onscreen help
▲ Fast and high capacity
▲ Easy to use
▼ Can't put background text on printed reports
▼ No way of exporting data for mailmerge

DATASTORE II

£39.95 • Digita • 0395 45059

Another standard database, written in BASIC and using Mallard's famous JETSAM commands. Is therefore slow in some parts though version 2 is considerably faster than 1. Simple to use, has calculation facilities and a good control over the printed output – your printouts can be made to look very impressive. You have to set the maximum number of records you want before you start, which is tedious, and browsing is slow.

PLUSES • MINUSES

▲ Good range of print format commands
▲ Simple to use
▲ Calculation facilities – OK for accounts use
▲ Nice touches eg. text automatically adjusts size to fit printout
▼ Must set max. no of records on setting up database
▼ Only two print formats per database
▼ Slow at browsing through

SAGESOFT RETRIEVE

£70.00 • Sagesoft • 091-284 7077

A high-power package that is relatively easy to use with password security if desired, calculations, automatic counting or deletion of sets of records satisfying given conditions It also has sophisticated sort and select commands, and change the structure of an existing database. All this is done by a set of commands rather like a programming language. Printed formats are rather limited though and the program insists on using both drives, making use on a 8256 impractical.

PLUSES • MINUSES

▲ Easy to use for a powerful package
▲ Advanced sorting and selection commands
▲ Subsets can be written to files
▲ Can count or delete subsets with one command
▲ Labelling/mailmerging routines included
▲ Can change structure of existing database
▼ Impossibly big program for 8256
▼ Printed output limited – must use mailmerge

PROTEXT FILER

£24.95 • Arnor (0733 68909) • All PCWs

This is a program which adds database features to Protext so that you can use a database system from within the wordprocessor. It's very convenient for maintaining records without having to keep switching to a database package. Except for the sort program, you can work within Protext all the time.

PLUSES • MINUSES

▲ Very easy to use once you learn it.
▲ Familiar Protext environment.
▲ Good sorting facilities and name handling.
▲ Can use Protext/database in parallel.
▲ Import/export/print formats no problem.
▼ No calculation facilities.
▼ Selection facilities are a bit crude.
▼ If you're familiar with Protext you can probably mimic a database yourself.

MICROFILE

(Sold in The Micro Collection)

£49.95 • Saxon Computing • 0401 50697

Microfile is a well implemented simple database, driven by plenty of menus and on-screen prompts. It's fast and has good screen control, although it has some size restrictions. Microfile comes as part of a software suite,"The Micro Collection", which is good value (Microfile, Microwrite, MicroSpread, Flexilabel and Lock-It)

PLUSES • MINUSES

▲ The price includes competent word processing, spreadsheet, labelling and encryption programs
▲ Plenty of menus and on-screen prompting
▲ Very flexible formatting for screen layout and printing
▲ Numeric fields can be expressions to be calculated
▲ Indexing is fast and can be on several fields
▼ Maximum number of fields per record is only 20
▼ Limited facilities for totalling up fields in a database

•EDUCATIONAL•

ANIMAL VEGETABLE MINERAL WORLD WISE

£14.95 each • Bourne Educational • 0794 523301

Aimed at the younger market, 7-15 year olds. Both these programs work by learning as the child uses them. Think of an object and the computer tries to guess it. If it is wrong, the child is asked for a question which would allow the PCW to be right next time, and it learns.

PLUSES • MINUSES

▲ Can be used as many times as the child's imagination holds out
▲ Performance can be analysed by a teacher after a session
▲ As you build up a base of objects and questions, they can be saved for reuse
▼ It needs a lot of typing, hence a lot of supervision
▼ The PCW starts with only two objects known , so it takes time to get going
▼ Documentation has hardly been altered from cassette-based versions
▼ Since it is for young children, more imaginative use of the screen would be nice

WRITE RIGHT

£9.99 • Wadd Soft • 0253 721303

Program consists of 24 sets of multiple choice questions designed to test and improve the student's knowledge of the English language: sentence construction, spelling, punctuation, vocabulary, for example.

PLUSES • MINUSES

▲ Covers all the most important aspects of language learning
▲ Very addictive
▲ Good fun and easy to use

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VISA

2 FINGERS TOUCH TYPING

£24.95 • Iansyst • 01-607 0187

Despite its provocative name, a useful typing tutor in that it specifically caters for people who can already get by on keyboards with two fingers. You are gradually introduced to touch typing, so your speed doesn't drop while you learn. Fills a necessary slot in the Typing Tutor market.

PLUSES • MINUSES

- ▲ Suitable for improving two-finger typists without much drop in speed
- ▲ Full on-screen instructions
- ▲ Exercise material is interesting text, not letter drills
- ▼ Explanation text is annoyingly verbose in some lessons
- ▼ It doesn't always ensure that the cursor is properly aligned with the exercise text

GIANTKILLER

£14.95 • Topologika • 0733 244682

A mathematics adventure game loosely based on Jack and the Beanstalk. Lots of intriguing puzzles which should stimulate any student up to GCSE standard. Not the best adventure game ever written but great for making mathematics fun!

PLUSES • MINUSES

- ▲ Puzzles plausibly integrated into scenario
- ▲ Progression of game is simple and well defined
- ▲ Puzzles introduce a lot of valid mathematics
- ▼ Program understands only very simple commands
- ▼ Saving a position takes a move – can be fatal
- ▼ Won't be of particular help in exams

BETTER SPELLING

£12.95 • School Software Ltd • 010 353 61 27994

This is a spelling course aimed at the 8 to adult age group. It consists of a series of well organised, short lessons each dealing with one topic, like plurals or which version of there/their/they're to use in a sentence. The use of the PCW screen is rather unimaginative, and doesn't hold your attention.

PLUSES • MINUSES

- ▲ Well thought out lessons to emphasise particular points
- ▲ Teaches words in a sentence context as well as in isolation
- ▲ Lessons can be picked in any order from a menu
- ▲ Seems to be proof against mischievous key pressing
- ▼ Boring use of the screen doesn't grab interest
- ▼ No instructions come as to how to use the program.

CHEMISTRY • BIOLOGY

£12.95 • School Software • 010 353 61 27994

These two are fairly traditional question-and-answer tests. You are faced with a choice of 10 topics, and then asked 10 or so questions each, where you have to fill in the blank in a statement. There are preamble notes beforehand, and if you get it wrong you are given a clue. Aimed at 12-16 year olds.

PLUSES • MINUSES

- ▲ Questions would challenge a GCSE pupil well
- ▲ Preamble notes introduce topics
- ▼ The fill-in-the blank questioning style has little flexibility for different answers
- ▼ No option to add questions for a specialised syllabus
- ▼ Some careless errors, like incorrect facts and hard to decipher chemical formulae

MICRO MATHS

£24.95 • LCL • 0491 579345

Supposedly covering 8 to adult ages, this seems an O-level type program, covering topics from calculus to tables. A good implementation on the PCW with proper use of the screen. Questions are picked at random from a pool, so may repeat but never run out. Replies to questions are typed in mathematical notation, like X^2+3

PLUSES • MINUSES

- ▲ You can pause to use BASIC as a calculator while you think
- ▲ 'Unlimited' question set
- ▲ Comes with a 'free' book of AEB O-level questions
- ▲ Good hints and explanations when you get an answer wrong
- ▼ Questions in a topic repeat occasionally
- ▼ Some frills, like the clock and beeper, are annoying
- ▼ No flexibility to add questions for a particular syllabus

AMSTAT 1,2,3 AND 4

£30-ish • Coleman • Ashby-de-la-Zouch LE6 5DA

A suite of four statistical routines including a business analysis program, forecasting and resource management. Individual prices range from £27.95 to £39.95, all four cost £99.95. Sophisticated but perhaps awkward for beginners.

PLUSES • MINUSES

- ▲ Good range of statistical functions
- ▲ Good manual
- ▲ Can produce fair quality graphical results
- ▼ Some editing procedures very long-winded
- ▼ Needs some expertise to use properly
- ▼ Weak on checking that input data is reasonable.

YES CHANCELLOR!

£14.95 • Topologika • 0733 244682

Wait! Don't skip over Yes Chancellor! because it calls itself an 'economic simulation' program. Instructive and fun to use, you type in your annual budgets (tax rates, public spending etc.) and see your popularity plunge and the economy crash. Great for economics classes, also an amusing game in itself.

PLUSES • MINUSES

- ▲ Simple but effective model of the economy
- ▲ Comes with booklet explaining economic principles
- ▲ Great for teaching economic and political pragmatism!
- ▼ Can get boring as a game
- ▼ You can't adjust the model of the economy, so it can be too simple

IANKEY CRASH COURSE

£24.95 • Iansyst • 01-607 0187

A fairly traditional typing tutor, taking you through basic keyboard exercises. There's a lot of explanatory text, which gets in the way second time around. Definitely competent, but a bit boring.

PLUSES • MINUSES

- ▲ Mostly avoids boring letter drills
- ▲ Very full on-screen information guides you along
- ▲ "Fast" option cuts out some text if it gets repetitive
- ▼ Not particularly imaginative use of graphics
- ▼ It doesn't always ensure that the cursor is properly aligned with the exercise text

•COMMUNICATIONS•

Communications is one of the glittering areas of computing, gurus would have you believe. It can provide a fascinating hobby for 'hackers', but more importantly it is a valuable business tool.

'Electronic mail' is just what it says: you use your PCW to send messages, which can be documents thousands of words long, to others on the electronic mail system. The best known system of this kind is Telecom Gold, which also allows you to send telexes. Another major system is Prestel, which is more of an information provider – you can read share prices, weather information and other news direct from your phone line.

For any professional service, you pay a registration fee, plus a connection charge – typically around 10p per minute you use the system. Of course, your phone bills are extra. For hobbyists there are also 'Bulletin boards', which are effectively a kind of private electronic mail system run by a system operator (a 'sysop' to those in the know).

To use any service, you will need to buy a modem and an interface. A modem allows you to send computer signals down a phone line, and the interface gets the signals from your PCW to your modem. The pair will set you back £200 or more. Once done, you need some software to allow you to send and receive data, and it is this software reviewed below.

Electronic mail services just send strings of characters to and fro, whereas Prestel is a 'Viewdata' system, meaning it sends pictures and graphics too. Software needs to do more to receive Viewdata graphics, so if you want to use Prestel make sure your software is up to it.

8256UKM7.COM

Public domain (ie. free!)

P.D. software documentation is often poor but this program has an above average document file. UKM7 was written to support ASCII file transfers using error correction and as a dumb terminal either for use over the phone or between two Amstrads. Between two PCW's file transfer is possible at a staggering 31,250 baud which is even faster than PIP! Easy to use for beginners and better than KERMIT, UKM7 provides a cheap and excellent way to communications after you've got fed up with the PCW's MAIL232. 8256UKM7 is available from the Public Domain Special Interest Group, or most bulletin boards supporting the PCW machines.

PLUSES • MINUSES

- ▲ Cheap! (the price of a phone call)
- ▲ Easy to use, and helpful menus
- ▲ Both CRC and Xmodem protocols supported
- ▲ Single file and Batch Mode transfers
- ▲ "Quiet" mode for slightly faster transfers (on-line transfer progress report disabled)
- ▼ Only ASCII, no Viewdata
- ▼ You need to find a PD software source (eg. use a modem and MAIL232 software)

DIALUP

£89.99 • PMS Communications • 021-643 7688

Offers both E-mail and Viewdata operations. Very easy to use, and offers an XMODEM transfer protocol unlike Sage ChitChat. If you are buying a modem too there are some cut-price bundled deals to be had, eg. the Miracle Technology WS4000 modem.

PLUSES • MINUSES

- ▲ Simple to use
- ▲ Comprehensive file transfer commands, including XMODEM and the increasingly popular KERMIT
- ▲ Runs from the M drive
- ▼ Manual is not PCW specific, and the references to 5.25" discs are tedious

CHITCHAT

E-MAIL/VIEWDATA/COMBO

Sagesoft • £69.99/£69.99/£99.99 • 091 284 7077

Two communications programs for the 8000 series machines that have been around for a good time now. Most of the features you will need are here: message text editor, preprogramming unattended tasks(if you use a suitable "intelligent" modem), directory of stored numbers, copy to printer, and a very useful connect time clock so you can watch your phone bill climb! E-mail is used for simple text phone links like Telecom Gold, whereas you'll need Viewdata if you want to use Prestel. The Combo pack contains both E-mail and Viewdata.

PLUSES • MINUSES

- ▲ Good, clear documentation
- ▲ Easy for first timers to use
- ▲ Built in text editor for pre-sending message preparation
- ▲ Pre-definable tasks executable at any preset time if unattended.
- ▼ No error corrected file transfer (i.e. Xmodem or CRC)

MINI OFFICE PROFESSIONAL

Good value

£29.95 • Database Software • 0625 878888

Mini Office is a suite of five integrated programs: database, word processor, spreadsheet, graphics module – and a comms package which is as comprehensive as anything else on the market. It can display both ordinary text screens and the 'Viewdata' block graphics used by Prestel. You are offered baud rates from 75 to 9600, separately set for transmit and receive, straight terminal emulation for use with Telecom Gold, and XMODEM and KERMIT file transfer protocols for error-proof transfer of long files. Would be well worth the money just by itself – and of course you're getting four other very good programs as well.

PLUSES • MINUSES

- ▲ Very comprehensive – a genuinely useful comms package
- ▲ Ordinary text and 'Viewdata' block graphics
- ▲ Can save setups under names and recall them, so you only need work out your baud rates/parities once
- ▲ You can set keys to return strings, such as Telecom Gold passwords
- ▲ Comes preconfigured to use Prestel and Telecom Gold
- ▼ Manual is of very little use
- ▼ Still some bugs

COMM+

£86.25 • NewStar • 0277 220573

This single package combines both ASCII and full Viewdata block graphics and Telesoftware downloading. A very powerful command language allows you to look for particular messages coming in and take actions, even while doing other things. Its use is only limited by your programming ability.

PLUSES • MINUSES

- ▲ Very comprehensive and well indexed ringbound manual
- ▲ High quality Viewdata graphics
- ▲ Well presented on-line help menus for use by beginners
- ▲ Autodialler program works with most manual modems
- ▲ Telesoftware downloading facility, with CRC/Xmodem checking
- ▲ Very powerful command language, doesn't need much programming skill to learn
- ▼ Not recommended for absolute beginners to communications

• PROGRAMMING •

Programming languages come as either 'compilers' or 'interpreters' – compilers pre-process the program into machine code, so are much faster. The PCW's standard Mallard BASIC and LOGO are both interpreters. Compilers are generally more cumbersome to use than interpreters, but have obvious benefits.

With language compilers in particular it is difficult whether they are reliable and efficient without spending many weeks working with them, impossible for a brief review. If you use a specialised programming language and have any comments that would help us compile a good software file entry for it, we would be pleased to hear from you.

PASCAL / MT+

£45.00 • Digital Research • 0635 53499

A full implementation of ISO standard DPS/7185 Pascal with a number of extremely powerful additions. Is very good for large complex applications - both data-processing and system control.

PLUSES • MINUSES

- ▲ A very powerful tool for the serious software writer
- ▲ Unlimited program size with modular development and use of overlays
- ▲ Built-in assembler
- ▲ Improved string handling (over standard Pascal)
- ▲ Choice of BCD real numbers for commercial/financial use
- ▼ No built in text editor - will need to operate separately
- ▼ Compiler in general and the manual in particular are not for beginners.
- ▼ No graphics

MIX C

£29.95 • Advantage • 0844 52075

American C compiler. You can buy a full screen editor with it for £19.95 extra. Also machine code assembler & examples for £8.95 each.

PLUSES • MINUSES

- ▲ Features a C tutorial
- ▲ Comprehensive implementation and massive manual
- ▼ Not for the newcomer to programming

DEVPAC 80 MKII

£49.95 • Hisoft • 0525 718181

Version 2 of the PCW hacker's first choice of development system Substantially upgraded from the original with a new quite powerful debugger, and a Mini Office-style main menu from which to run the individual utilities or your own finished programs.

PLUSES • MINUSES

- ▲ Powerful assembler producing .REL files
- ▲ Good hex facility for BASIC programmers
- ▼ Text editor antiquated and clumsy
- ▼ Weak monitor

HISOFT C

£39.95 • HiSoft • 0525 718181

A very good C compiler, fast, produces good compact code,

PLUSES • MINUSES

- ▲ Compiles program into ordinary CPM .COM file
- ▲ Produces compact code
- ▲ Fast and inexpensive
- ▼ No floating point arithmetic

ARNOR C

£49.95 • Arnor • 0733 68909

Good compiler with floating point arithmetic, but not as fast or as cheap as HiSoft C.

PLUSES • MINUSES

- ▲ Excellent integrated text editor
- ▲ Floating point arithmetic
- ▼ Cumbersome to produce .COM files, needs special run time support program
- ▼ HiSoft C is faster and cheaper

LFORTH

£19.95 • HiSoft • 0525 718181

Forth is an unusual language, somewhere between assembler and C. This is one of the few compilers available for the PCW.

PLUSES • MINUSES

- ▲ Comes with a Forth editor
- ▲ Quick and efficient implementation
- ▼ Manual doesn't teach you Forth

PASCAL

£39.95 • HiSoft • 0525 718181

A standard full Pascal compiler

PLUSES • MINUSES

- ▲ Well integrated text editor – when you hit a compilation error you are returned to the correct point to edit it
- ▲ Short compilation time, economical on memory
- ▼ Manual makes no attempt to teach you Pascal.

THE VICAR

£29.95 • Iansyst • 01-607 5844

A programming tool for serious programmers. If you have a several-hundred line program held in several files on a disc, you can lose track of which variables are used where. The VICAR produces a concordance listing and other diagnostics, to help you find bugs and maintain the program.

PLUSES • MINUSES

- ▲ Easy to use but still flexible through use of options
- ▲ Amstrad versions all at a special low price
- ▲ Good manual
- ▼ Only of value on large programs
- ▼ Limited value to most PCW users (except BASIC buffs)

MODULA 2

£45.00 • FTL/Grey Matter • 0364 53499

A compiler. Modula-2 is the successor to Pascal, good for large programs requiring separate compilation.

PLUSES • MINUSES

- ▲ Full implementation with extensions.
- ▲ Includes libraries of predefined modules
- ▲ WordStar-type screen editor included
- ▼ Compilation process is longwinded and not for beginners

CBASIC

£45.00 • Digital Research • 0635 35304

Compiler

PLUSES • MINUSES

- ▲ Easier programming tool than conventional BASIC interpreter
- ▲ Very similar to BASIC, so easy to learn
- ▼ No text editor – must split your programs into 200 line chunks to work on
- ▼ Programs work no faster than they would in conventional BASIC, sometimes slower
- ▼ Non-programmers may get bored.

MAXAM II

Powerful

£49.95 (£69.95 inc. C) • Arnor Ltd (0733 239011) • All PCWs..

CP/M machine code development system incorporating an editor, assembler and monitor. It will allow you to disassemble extra memory on m: drive.

PLUSES MINUSES

- ▲ Very versatile assembly language programming environment.
- ▲ Flexible monitor capable of bank switching, conditional breakpoints and symbolic debugging.
- ▲ Tailored to meet all CP/M Plus programming requirements.
- ▼ Program can't cope with some undocumented Z80 instructions.
- ▼ Program assumes basic familliarity with the Z80 assembly language.

NEXT MONTH

The guide continues with the categories of SPREADSHEETS, GRAPHICS and GAMES. The month after that will cover WORD PROCESSORS, ACCOUNTS/ PAYROLL, UTILITY and DTP software, and the month after that it's back to this month's topics.

Our intention is to keep publishing the three parts of the guide in rotation, updating it each month to include all new products. If you would like to see other sections of the guide, back issues of 8000 Plus are available at £1.75 each.

Meanwhile, if you are aware of any significant omissions or errors in the File as published, please let us know. We intend to maintain it as THE authoritative guide to PCW software.

Supermaths

Sums can be fun. Sgdpecially written for **PCW** computers, this user-friendly package covers addition, multiplication (including tables), subtraction and division, with a choice of 4 levels of difficulty.

PRACTICE and **TEST** options show scores and reward success. **PRACTICE** mode corrects mistakes. In **TEST** mode you select the test time and then answer as many questions as possible. A score board shows the score so far and time to the last answer.

A **WORKSHEET** option produces worksheets on the printer with a choice of two different styles, with separate answer sections. Friends may compete at different levels of difficulty for top scores.

Price £16.95 plus £1.00 P&P (Cheques payable to **Abacus Software**). Send payment and order to; 11 Woodcote Drive, Orpington, Kent BR6 8DB

GOOD DTP STARTS HERE

DESIGNER STUBBLE is a two-part guide for users of Database's Desktop Publisher program. It has been used to plan hundreds of successful publications.

ISSUE ONE provides a complete foundation course in newsletter design and production. It costs £16.95 on two 3" discs in CF2 format or £13.50 on one disc in CF2DD format.

ISSUE TWO is a follow-up survey of advanced techniques. It provides a useful range of professional fonts, plus a full guide to using MasterScan and Stop Press with The Desktop Publisher. It costs £16.95 (CF2 format only).

"VALUE VERDICT 5/5" *(8000 Plus, November 1988)*

John Evans ■ 20 Grosvenor Place ■ Bath BA1 6AX

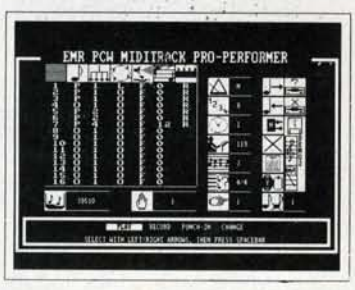
EMR PRO PERFORMER

The complete MUSIC PROCESSOR for your PCW!

PRO PERFORMER turns your PCW into a powerful and creative recording studio for MIDI instruments.

Established since 1982, EMR have put computer-aided music making into countless homes, schools and studios - and now the most versatile system is on the PCW, giving anyone able to play a melody on the keyboard a chance to become a better musician using PRO PERFORMER.

PRO PERFORMER has a new type of recording process that gives not just one 16-track recorder, but 99 in memory at once! Using the quick arrangement facility, each 16-track "song" can become part of the most complex piece in performance. Its single screen with easy-to-remember icons opens up a tremendous variety of music control using a few keys, for recording and playback as fast or slow as you like, including step by step entry (with any size chords). A host of extra pro features include "system exclusive" for sound dumps, tape "sync" and midi thru. Works with any midi instrument.



"Easy to use and has a wide variety of features that will make it useful to pop or classical musicians."
"EMR's package does the job well, and for all PCW-owning MIDI musicians, this is a must."
8000 PLUS Magazine August '88 (who voted it 5 out of 5).

" The sequencer worked very well, is very simple to use; the icon system is easy to learn and the manual is excellent" YAPCW Nov 88.

Get your free PCW MUSIC PACK from EMR now, giving full details of the PRO PERFORMER, plus discount voucher for £6 worth of midi cables.

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PCW MIDI INTERFACE £89.90.

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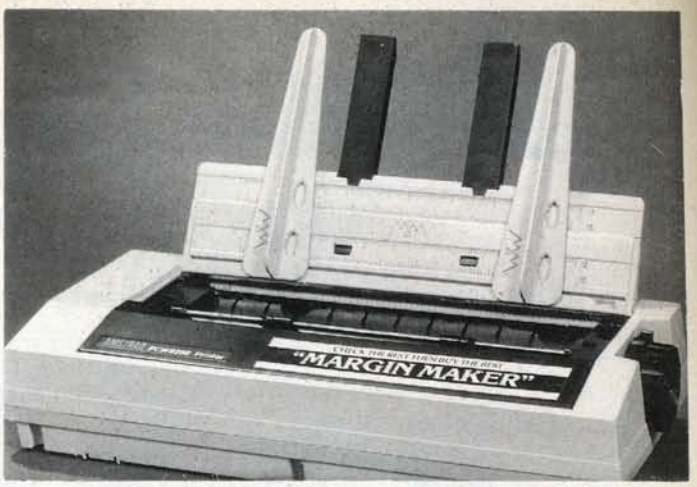

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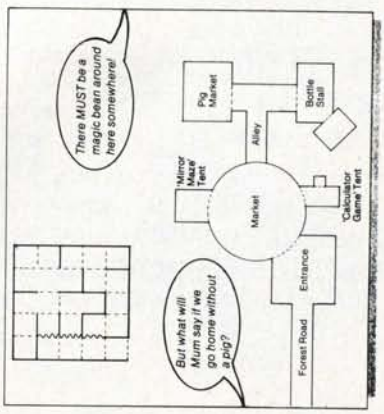

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SPEC

BACK ISSUES

We have limited quantities of the back issues listed below. The prices include a nominal 25p postage. All issues contain excellent TipOff sections and a selection of BASIC listings, plus the other regulars. Don't miss the chance to expand your collection.

Issues 1-6 SOLD OUT

Issue 7 £1.50 Spreadsheets special. LocoScript troubleshooting. Reviews of Cavalier accounts, Personal Tax Planner, Stockmarket packages, Adrian Mole. **Order code 8015**

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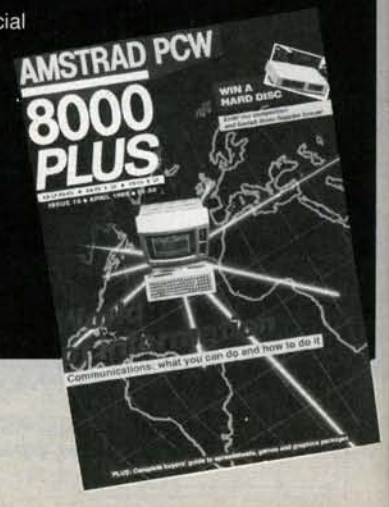


AL OFFERS

THE 8000 PLUS SPECIAL OFFERS SECTION

Welcome to the new-style 8000 Plus Special Offers section. As ever, our intention is to bring you the best selected products in the marketplace - products which for various reasons are often hard to obtain in the shops. Rest assured, however, that to qualify for the Special Offers section the product has to have been successfully reviewed in the magazine. In some cases, such as DTP and LocoScript books, we have chosen from a plethora of titles the one which we believe offers the best features and represents the best value for money.

Scan these pages at your leisure. Not only are many of the items hard to obtain, but we usually manage to offer you them at less than the full recommended retail price and we carry stocks. If you call (0458) 74011 or fill in the Order Form on the left hand page, you'll usually get your goods within three working days of ordering (although some items - highlighter pens! - do run out of stock and can be hard to obtain so please allow 28 days for delivery in such cases).

If you have any queries contact Christine Stacey or Sarah Richards on (0458) 74011.

9512 software:
The following titles do not run on the 9512:
Tetris
Distractions

CATCH 23

Just £14.95 (RRP £19.95)

PICK OF THE MONTH!

'A good deal of thought and planning has gone into this game and it shows', was what our reviewer said of this 3D wire graphic arcade strategy game in issue 25 of *8000 Plus*. Martech's first PCW game is something of a quiet triumph for intelligent gameplay interspersed with furious action requiring lightening-fast reactions at key points.

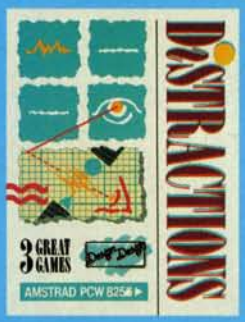
The basic aim is to enter a military complex and get out with a laser system blueprint. You have 14 sectors to explore, and weapons include detonators, bombs and timers. The vector graphics - *a la* Starglider - involve you in a thoughtful game which offers the best new PCW entertainment for many a long winters night.

Order Code 8043

DISTRACTIONS

Just £9.95 (RRP £19.95)

Wow! Three games on this compilation disk, which makes each one cost £3.30 each. It's not just value for money though, because the games themselves were written by Design Design and feature three great program ideas. NEXOR is a superior 3D isometric graphics strategy game, 2112 AD an icon-driven arcade adventure and On The Run is a super-fast all-action maze game.



Altogether you're getting three intelligently-written graphic arcade games with a strong strategy element ensuring that they remain playable and interesting for more than the time it takes to master the initial 'shoot to kill' element. Which is why it's called Distractions!

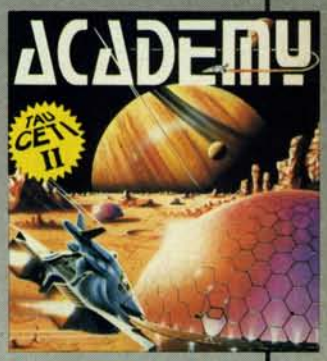
Order Code 8047

ACADEMY

£12.95 (RRP £19.95)

A brilliant sequel to the ground-breaking space exploration game Tau Ceti. In Academy you must complete 20 missions, grouped in five levels of four; combat skills and environmental understanding mean must both be completed to succeed. Graphics and control factors have been heightened to push computer gaming to a completely fresh level. You won't be disappointed!

Order Code 8035



TETRIS

Only £14.99 (RRP £19.99)

The first Russian game to reach the West has won rave reviews everywhere. All you have to do is guide blocks down the screen into complete rows on the bottom – but be warned it has a 'Just one more go' rating of 100 per cent!

Order Code 8027

LIVING DAYLIGHTS

Just £9.95 (RRP £14.95)

'A demanding game with plenty of action' was the verdict on the officially licenced computer game of the James Bond film starring Timothy Dalton.

The game, based on the film and the coin-op arcade game by Arcadia, features eight levels, each in a different location, in which your responses must be lightning-quick in order to survive. Gameplay involves standard shoot-'em-up left/right/up/down/fire, with weapons including bazookas, grenades, missile-firing pens, crossbows and a ghetto blaster!

A game for those that like their games in the 'just one more go' adrenalin rush category!

Order Code 8046

SPECIAL OF

LOCOFILE

£29.95 plus Locoscript II wall chart and free disk

'It's difficult to think of any LocoScripters who wouldn't find LocoFile useful', was Rob Ainsley's conclusion when he previewed Locomotive's new database in issue 26 of 8000 Plus.

The fact is, a database which can be accessed from inside LocoScript II and is fully compatible with LocoMail is a brilliantly logical idea. Locomotives usual panache comes to the fore in the feel of the program too. Essentially an easy to use card index, LocoFile features flexible indexing, fast lookup, efficient use of disk space and is suitable for any PCW (plus three hard disk drives).

Features include:

- Look up or change card details from within LocoScript
- CUT and PASTE to and from LocoScript
- Use up to eight indexes at once - alphabetic or numeric
- Cards up to 99 lines deep and 80 columns wide
- Up to 50 items per card
- Holds1,000 names and addresses on a 706K disk
- No limit to number of entries on hard disk
- Add or delete fields, change card size at any stage
- Fully two-way compatible with Loco Mail

For all LocoScript 2 users who want an expandable suite of applications, Locomotive is providing the answer without ever having to boot up CP/M. LocoFile provides the classic easy-to-use environment familiar to LocoScript users and has all the hallmarks of a major software launch. Sighs of relief all round!

Order Code 8044

FREE!
With your copy of LocoFile
- LocoScript 2 full colour wall chart
- Blank 3 inch CF2 disk

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£7.95
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Order Code 81111

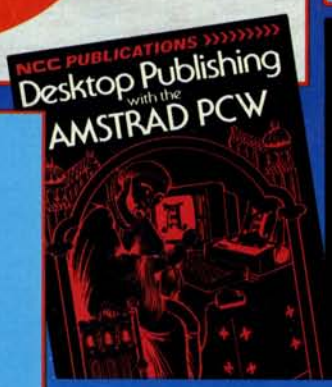
MINI OFFICE PROFESSIONAL

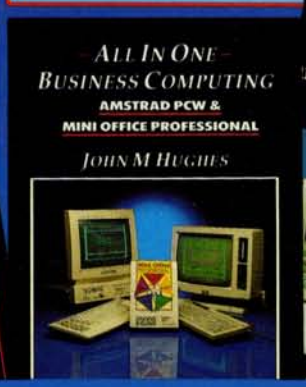
Only £23.95 (RRP £29.95)

An incredible value-for-money integrated package combining database, spreadsheet, word processor, comms and graphics function, Mini Office combines features often not included in software three times the price: sideways spreadsheets, full database sorting, Prestel compatibility and extremely fast word-processing including a word counter.

In one package, this does just about everything it's possible to do on a PCW – if you want to break free of LocoScript, this amazing value program is for you.

Order Code 8011





DESKTOP PUBLISHING WITH THE AMSTRAD PCW

Only £8.50!

Your PCW is a powerful desktop publishing tool - with it you can print everything from newsletters to posters. With the right software for your needs the options open up your computer as a handy way of earning your living. Mike Milan looks at all possibilities. He leaves the actual choice of software up to you, and discusses page layout, reproduction methods, printers, fonts, trim marks, photo layouts - all in a heartening prose.

Order Code 8035

FFERS

TRIVIAL PURSUIT

Just £14.95 (RRP £19.95)

The worlds most popular board game has been revamped for the PCW. This Domark version features tunes (played backwards!) and graphics-based questions, as well as a new cartoon character in the form of TP who introduces the questions.

Over 3,000 questions are included. Many are new and ensure that this version contains an entirely novel flavour whilst maintaining the essential fun of the original. So now's your opportunity to try and answer the worlds most intriguing questions! These include: Which members of the Royal Family can vote? Do frozen peas float? What is Desperate Dan's favourite food?

"What mighty contests rise from trivial things."
ALEXANDER POPE

Here's your chance to have fun and learn something at the same time!

Order Code 8045

ALL IN ONE BUSINESS COMPUTING:

AMSTRAD PCW AND MINI OFFICE PROFESSIONAL

£11.95 • Sigma Press

Mini Office is an integrated package, and Hughes shows more clearly than the manual how each module works together. Detailed explanations abound, with four chapters on word processing, three on comms, two on the database and spreadsheet and one on the graphics module.

With this book you may never need any other software for your PCW!
Order Code 8042

FREE!
20 3 inch disk labels in four colours are included free when you order the Mini Office book through these pages

LOCOSCRIPT 2 & AMSTRAD PCW'S

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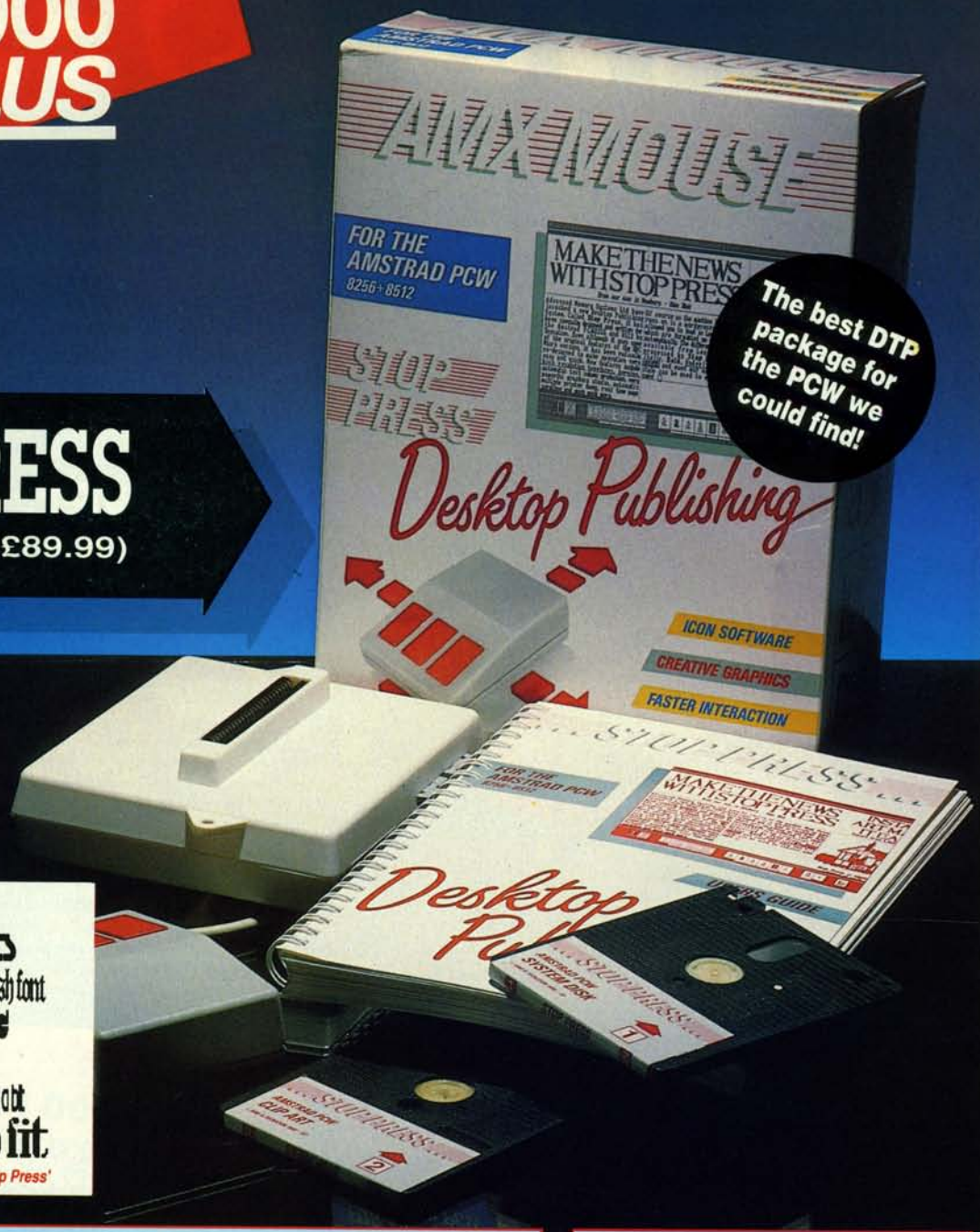

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Desktop publishing – doing page makeup on your computer instead of the old cut-and-paste method – is the boom area of home computing. All the national dailies are switching over to DTP methods – and so are thousands of PCW owners, to produce newsletters and flyers.

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NEWSFLASH: "Santa" has run amuck pushing millions of Amstrad PCW's down chimneys. If receivers (not reindeers) need Locoscript software help contact: Papertalk 0708 751772 when chimneys and minds will become cleared.

LOCOMAIL consultancy and programming service for Amstrad PCW users. Free estimates given before work is started. Contact John Blandford, 15 St Albans Road, Sandridge, St Albans, Herts AL4 9LA. Phone 0727 59913.

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This section of the magazine offers you the chance to speak directly to the huge waiting world of PCW owners.

You can place an ad of up to 30 words for just £7.50. So you could use it to sell a computer or launch a user group or publicise a piece of software you've written.

One thing you CAN'T advertise is the sale of swap of software you've purchased. Such ads can be misused by software pirates.

To place an ad, just fill in this application form and send it to us with payment. We'll then place the ad in the next available issue (published 2-7 weeks after we receive your order).

Order form *Send to: 8000 Plus Small ads, Future Publishing Ltd, 4 Queen Street, Bath BA1 1EJ*

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POST SCRIPT

A zeppelinful of Zeitgeist, zest and zeugma zeroed in on by a zealous Ed.

The last letter of the alphabet to introduce the last word in letters: PostScript. This is *the* place to exchange ideas on matters related and unrelated to the PCW – send your contributions to *PostScript, 4 Queen St, Bath BA1 1EJ.* Discussed this time are our future, America, wobbly screens, PD, disappearing disc cases...all thought-provoking thoughts from you and your PCWs (there's your zeugma).

And the future?

I was not surprised to see the questionnaire in this (October) month's issue of 8000 Plus. I had been wondering for the last few months where you can go from here. Although new PCW users and (one hopes) subscribers to the magazine come along every month, they must inevitably form a smaller and smaller fraction of your total readership. Your tutorial function, which has served me, and probably other readers too, better than all the manuals and books put together, cannot therefore continue to be as dominant as it has been. Although new programs will appear from time to time, again they are bound to be of less and less significance compared with those already in existence and doing the basic jobs. What is to be your future role, the main substance of your features and articles next year and the year after that, is therefore a very real question.

Of course you are not alone in this. The software companies, PCs as well as PCWs, for games as well as "serious" programs, must be asking themselves with far more urgency than you need to do "What else can we offer? Isn't it all getting a bit repetitious?" Even the increased power of the new transputerised hardware currently being prepared for launching, with its opportunities for increased data storage, greater processing speeds, multi-tasking facilities and greatly enhanced colour graphics power, does not promise to change the things that small businesses and keen individuals actually do with their computers. The fact that your writers and graphic designers and overall editorial grasp have been consistently superior to those of any other journal in the field makes the problem, ironically, more serious for 8000 Plus. You have recognised in good time that you are at a turning point. But – which way to turn?

I cannot claim to have the answer(s), but I can offer a few suggestions for you to consider. In my opinion you are in a much better position than either the software houses or the games magazines to face the future because of the wide diversity of your readership. Not all of us have a sufficiently clear-cut and interesting use for our machines to warrant a Case In Point article. Many of us, however, would be prepared to echo the man I met in the shop as I was buying my PCW: "It will change your life", he said. As I was getting my 8512 as a sixtieth birthday present, I thought that a bit unlikely. Things tend to settle down a bit after the kids have left home and your job has come to an end. But now, after almost eighteen months, I know how right he was. This machine in front of me now has taken a central place in my daily activities and thinking.

In understanding media back in 1964, Marshall McLuhan was referring to media of communication from the printed word to the televised image, but it applies with double force to PCWs. It is not so much what we write or design or organise with them that is of such great personal and social significance, but the very fact that we use them, that they give us so much more control, facility and accuracy in our handling of in our handling of information. And that there are so many of us. Unlike the printed book or the slick television programme, the PCW does not leave us the passive consumers of mass products, it puts the power in our hands. It is democratic, and one of the most encouraging facts to emerge from your recent editorials and letters columns is that, in the PCW world at least, women are truly equal to men.

My feeling is that 8000 Plus, while not forgetting its tutorial function, its obligations to its advertisers and their products, and the general fun business of being a personal computer user, could more overtly focus its attention upon the effects and the social implications of widespread PCW ownership. What does it do for small businesses, for the producers of club newsletters and parish magazines? How does it help writers – is it merely a question of degree compared with the typewriter, or does it add up to a difference in kind? If PCWs are, as I feel, a force for social change, is it worthwhile trying to see where that change is heading, and even trying to control it – all of us?

Ron Cook
West Bromwich

Costly mistakes

Oh dear! Perhaps Locomotive software shouldn't be producing

Pure new woollies

I suggest you invite Woolworth's to advertise in '8000 Plus'.

Rev Donald W Clements
Jersey

new products – 8000 Plus having trouble matching our products to their prices recently.

In your review of LocoFont Set 2 (note not LocoFont 2 or LocoFont II) you quoted the price as £19.95 – £5 too much, and in your preview of LocoFile you gave the price as £24.95 – £5 too little. In the November issue you variously quoted the price of LocoScript 2 as £19.95 and £25.00 – it's actually £24.95.

Also in your good software guide you mention LocoFont set 2 but fail to mention LocoFont Set 1. You also give LocoMail and LocoSpell as joint Locomotive/Amsoft products – in fact at the prices you give these are only available from Locomotive or our dealers.

And finally, in the good software guide you state that LocoMail needs a separate program to sort and filter addresses. Only half right, I'm afraid! Yes, you need LocoFile to sort addresses , but LocoMail is perfectly able to filter them all on its own!

So to avoid further confusion, our LocoScript products are as follows:

LocoScript 2 (latest version incl 2 fonts)	£24.95
LocoSpell	£19.95
LocoScript 2 and Locospell	£34.90
LocoMail	£29.95
LocoFile	£29.95
LocoFont (set 1 - 10 fonts)	£19.95
LocoFont (set 2 - 6 fonts)	£14.95

We are developing new products all the time, of course, and this list may well be added to in the near future.

Howard Fisher
Locomotive Software, Dorking

***8000* PLUS** *Sorry, We take every efort to insure against mking mistakes but ineveitably a few are boudn to creep. in.*

Ageing like the clappers

Reading the article on using the PCW to help run a club in which the society of which I am membership secretary is mentioned I noticed I had aged by about 50 years in the photograph which accompanied the article – the photograph printed does not relate to the caption underneath it and for the record does not show me supervising massed ringing but instead shows a member of Buckfast Abbey being shown how to ring by a lady ringer. At least I hope that's the case and not a phenomenon Andrew Bibby in his article on the health risks of using computers should have included – maybe I've been sitting at this screen for 5 decades longer than the suggested 2 hours!

It's mentioned that my quibble with Cambase is that it is not able to reproduce the musical sharp sign – I wrote to Camsoft about this and to their credit they very kindly sent a disk with instructions, at no cost to me, to rectify the problem. Now all I need is that spare time that must come sometime before the year 2000 so that I'll be able to convert the program!

Roger Lazenby
Leeds

A right state

I am moving to the United States in the new year and want to take my PCW 8512 and assorted discs with me. What steps must I take to plug in and set up my indispensable machine? Can I plug the PCW into a transformer when using a reduced voltage is from 220/210 volts to 110 volts? What about cycle frequency? I know that I can buy a PCW 9512 over there, but I do like the versatility of the dot-matrix printer.

Nicholas Caswell
London

***8000* PLUS** *There's quite a lot of mucking about, apparently. The US works on 60 cycle mains as opposed to our 50 cycles, and to cope with this the screen must be reset to 80x25 via two dip switches inside the machine. Your dealer should be able to help.*

This means a lot of software may not work properly; maybe the best idea is to buy another 8000 over there (still available, as far as we know) from Sears Roebuck on your vastly inflated New World salary. Or just not to go; you know Marmite is virtually unobtainable over there?

Stock answers

There were one or two errors in the presentation of my 'Stocks and Sheets' article (October, issue 25) and I thought I would bring these to your attention in case you received any queries from readers that you found puzzling.

First, in the reproduction of the figure "spreadsheet – share price moving averages", the end went missing. Unfortunately it includes all the interesting stuff including, in the formula display, the definition of the two moving averages – which the article was all about. Here is the table more fully shown:

:A::	B::	C::	...	Q::	R::	S:
1:DATE	6/27	7/4		10/10	10/17	10/24
3:SHARE PR.	1.77	1.79		1.72	1.69	1.35
5: 16 wk MA				1.75	1.74	1.71
7: 4 wk MA				1.81	1.79	1.64

Here is the formula display, which was not shown:

:A::	B::	C::	...	Q::
1:DATE	DATE(6,27,87)	B1+7		P1+7
3:SHARE PR.	1.77	1.79		1.72
5: 16 wk MA				AVERAGE(B3:Q3)
7: 4 wk MA				AVERAGE(N3:Q3)

In Mini Office the dates should be entered manually and the word MEAN replaces AVERAGE.

Margaret Osborne
Salisbury

"HOW WAS I TO KNOW THEY'D LEFT OFF ONE OF THE FORMULAE..."

PD vs. PD

I was pleased to learn from Mr Read's letter in your November issue that there is now yet another source of Public Domain software for the PCW.

There is some excellent software available in the Public Domain for only a modest copying fee and anything that makes this more accessible to PCW users is to be welcomed. On the other hand, misleading stories about software that is difficult to install or unusable or which is badly documented put many people off. I was concerned, therefore, at Mr Reed's suggestion that existing sources suffered from such problems or that his service is anything new.

It is true that PD software obtained from bulletin boards or from general (ie non-machine specific) libraries can often be very troublesome to install simply because most of it was not written to run on the PCW in the first place. Many of these sources provide an excellent service, but you do rather take pot luck as to what you get and they have never claimed otherwise. That is why specialist PD sources exist.

We have been distributing PD software exclusively for the PCW for some time on the same basis as that mentioned by Mr Reed. All the software in our catalogue has been specially selected from the best of the PD software around and all of it has been installed and tested on the PCW. Moreover, where the documentation has been inadequate we have rewritten it ourselves and have added further document files to all of our discs to help novice users get the most from the software. Every disc we distribute has a simple menu to make it easy to access this documentation and in some cases we have even added help screens to the programs to make them easier to use. There is really very little money in PD software for the PCW and so our operation is essentially a self financing hobby.

We hope that Mr Reed finds his venture as enjoyable and satisfying as we have. We also hope he will be able to promote his operation without casting unfair aspersions on those of us who are equally committed to the distribution of quality PD software for the PCW.

V A Hartland
10 Gains Rd, Portsmouth, Hants PO4 0PL

B-A shares

I own an 8512. Like (I guess) many owners, I use the 'B' drive almost exclusively. Is it possible to replace the 'A' drive on an 8512 with a second 706K Double Density Drive? I would then have (in effect) a 9512 with second drive. I would then presumably need LocoScript 2 as supplied on a 9512. But how would an 8512

respond to having two 706K drives? Advice would be much appreciated.
John Worthen
Swansea

***8000* PLUS** *Once running, asserts our Technical Editor confidently, there would be no problem. The snag is getting started up; you would probably need a special CP/M and certainly a special LocoScript (you can't get version 2.11, the 9512 version, by itself). The verdict at the moment is: perhaps possible, but very tricky unless you really know what you're doing. Perhaps as a trial you could try swopping the cables for the A and B drive in the back of the machine.*

Please help

Would you be so kind to answer the following queries. I have been asked myself but cannot answer! I own a PCW 9512 cum Daisy Wheel cum DMP.
1. Is the above capable of a 'graphics screen dump' in Logo, Basic or CP/M?
2. Can it run a GEM, version 2 or higher?
3. Is it able to run unmodified IBM PC versions of the following software:
a) Lotus 1-2-3
b) PC Automator (Direct Technology) version 2.2H
c) UCSD Pascal (Pecan) version IV 2.2
d) First Framework (Ashton-Tate) version 1.1
Joyce Francis
Selsey

***8000* PLUS** *I really don't think you're going to like this.*
1) No.
2) Nope.
3a) Doubt it very much.
3b) Don't think so.
3c) Well, not really.
3d) 'Fraid not.

A baffling case

It is becoming increasingly difficult to buy 3" discs in the original stiff plastic cases, as opposed to the thin card covers which in my opinion are a very poor substitute. Could you tell us of any source from which one can buy the plastic cases by themselves without the discs inside?
G K Armstrong
London

***8000* PLUS** *Amstrad gave us their usual helpful and cheery 'No comment' but Locomotive's Howard Fisher was eager to talk to us. 'Please, please tell your readers that the plastic disc boxes are not necessary, non-vital, and you don't need them at all,' he said.*

Three inch discs are the most robust of all – protected from the outside world by a thick black plastic case and spring loaded metal covers. Compare with 5¼ discs which come almost naked in a paper jacket. The plastic box, according to all the dealers we talked to, is overkill and Amstrad are simply eliminating an unnecessary cost. Your discs are fine in the plastic cases.

We never even use the plastic cases and have hundreds of empties hanging around the office. Don't bother writing with a padded bag begging for a few as most of them are propping up my 9512.

Speech defect

Can you buy a 'Speech synthesizer' for my computer, if you can, will you tell me where I can get one and what cost.
Mr J Atkinson
Tyne and Wear

***8000* PLUS** *An add-on capable of intelligible speech needs a very complicated sound chip. The only sound add-on for a PCW is (was) a simple three-channel music speaker – see this month's Leisure feature in the music section.*

Your best bet is to use another machine – there is a speech synthesiser built into the Commodore Amiga, for example. Its sound chip is remarkably sophisticated and powerful yet all the games on it seem to restrict themselves to Jean Michel Jarre music.

Two sides to everything

In the August edition of 8000 Plus you reviewed a number of DTP add-on packages, including our own "Headlines" for The Desktop Publisher. Unfortunately the review reads precisely as one would expect it to if the reviewer was under the impression it was a single sided disc – he mentions everything on side 1 and nothing on side 2.

I think your readers should be aware that "Headlines" is a double-sided disc, and as well as the fonts, the set of large letters, and the three sheets of graphics,there is an alternative set of large letters, and three maps on the other side. The graphics include a group of signs (stars, crosses, etc) and a couple of potpourri sheets with a slight inclination towards travel. The maps are of Britain, Europe and the World.
Steve Armitage
St Annes, Lancs

They shall not grow old

I wish to transfer on to a suitable database the roll-of-honour of a WW1 infantry regiment and to be able to extract from it a range of analysed data.

The present roll comprises some 10,000 surnames and initials, presented in alphabetical order within battalions, giving place of birth or enlistment; regimental number; rank; how killed (in action or died of wounds); where; date; medals, if any, etc. For example: (1) 14 Bn (2) Thompson S (3) b Manchester (4) 21068 (5) L/Cpl (6) K in A (7) France (8) 20/10/18 (9) MM

I am looking for a system that will provide lists of, say, "all Leeds-born men (3) Killed in France (7) from March to August 1917 (8); or "list in regimental numerical order (4) all men (2) in all battalions (1), who were killed at Gallipoli (7) in 1915 (8)"

Could you tell me if the 8256 is capable of supplying this demand, and, if so, what database or other accessory is needed?
T Lew Williams
Bangor

***8000* PLUS** *AtLast (Rational Solutions, 0566 81511, £39.95) will do the job. It selects over any number of conditions and squashes its data files up efficiently making it ideal for 8256s like yours. You may find that your 173k disc can only take a few thousand records (though AtLast lets you store info in each record efficiently, eg. 'F' for 'France') – if so you'll have to get a memory upgrade.*

I'm game

Like adventure games? Try this one. It's called 'trying to find out which games run on the 9512'.

The September Amstrad 8000 feature on the 9512 stated that Starglider doesn't run on a 9512. Well, it does on mine. The same page also says Jinxter and Guild of Thieves are not for us poor 9512 owners. But if you ring the people who made both games (Rainbird) they tell you exactly the opposite. Confused? Not half. Then in the Good Games Guide of the October 8000 Plus, games are divided into '8000s' only' and 'All PCWs' the latter category presumably including 9512s. Scrabble, for example, is listed as 'All PCWs' and indeed runs smooth as silk (provided you buy the right edition). Tetris is also listed as 'all PCWs' but on page 73 of the same issue you categorically state Tetris is a non-9512 game. The Pawn is also listed as 'All PCWs' and indeed Rainbird swear blind it will run on 9512, but your September issue says nay. Time and Magik, meanwhile, doesn't get a category at all!

All the retailers I've visited or called say they aren't sure what will run on the machine. Look on the box, they say. Would that it were simple. The artistic packaging of Time and Magik, for example, says nothing about 9512s on the box yet it runs beautifully. As for the software houses, some try to be helpful, some don't, but all fight shy of making definite pronouncement.

Yes, the 9512 is a relatively new machine. Yes, it's primarily for 'serious' work. But nevertheless, I'm only trying to spend some money and help the retailers and software houses pay the rent. So can anybody give me the real lowdown?
Ian Rowland
London

***8000* PLUS** *The 9512 has caused lots of problems with games. Amstrad have always helpfully said 'Any properly written software will run on all PCWs' but have never said how CP/M differs between the models. Many games, which often have complex copy-protection routines using obscure parts of CP/M, have turned out not to work on the 9512 – the results are totally unpredictable. Sometimes a game works on some 9512s and not others! As we often have demo copies to review without copy protection we can't always tell ourselves whether a game will work or not.*

The Good Software Guide editor (who shall remain nameless) has had her wrists slapped. It should have been updated from the box in the 9512 feature in September (issue 24) showing the 9512 situation, which was almost all right.

A few changes have happened since then, though, eg. Tomahawk is now out on the 9512. So here is the latest position: ***Don't work on 9512:*** *Academy, Armageddon Man, Batman, Blackstar, Guild of Thieves, Head over Heels, Mindfighter, Starglider, Strike Force Harrier, Tau Ceti, Tetris.* ***Work on 9512:*** *Backgammon, Brian Clough, Bridge programs, Catch 23, Chess programs, Draughts, Fairlight, Gnome Ranger, Head*

Listing to starboard

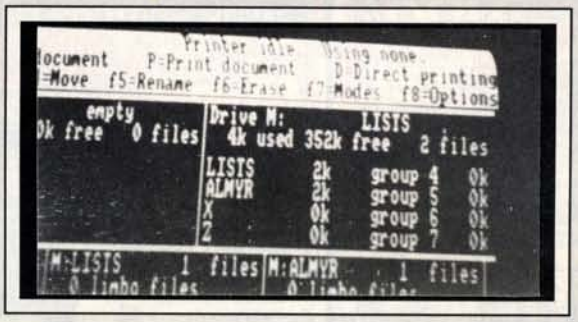
My Fat Joyce was one of the first available, so I will leave it to you to work out just how old she (he,it) is. She has had probably average use, certainly not heavy.

I enclose some rather poor haemorrhoid shots of the screen (I call them that because, like Polaroids, they develop quickly), which illustrate the problem. The top of the display is very wonky. Screen dumps are fine. This is not confined to LocoScript, but happens a little later when I switch on with any program. Any ideas please?

John Nash
Watchet

***8000* PLUS** *The commonest reason for this is the metal surrounding the screen (whose purpose is to shield it from magnetic fields) itself becoming magnetised. You have to demagnetise it (when it's switched off!) with degaussing apparatus – try your local television engineer. It's all a problem with the display, not with the software of course; your text files and programs are still OK.*

Other less pleasant causes can be defects of the coils inside in which case you'd need a specialist computer repairer.



Coach, Hitch Hikers, Jewels of Darkness, Jinxter, Knight Orc, Leather Goddesses, Matchday II, Pawn, Scrabble, Silicon Dreams, Sorceror, Stationfall, Steve Davis Snooker, Tomahawk.

This list cancels all previous ones!

Sic transit gloria Sigmundi

Re 'casting spells' in the November issue. Steven Matthews might like to know that, according to LocoSpell, FREUD is a FRAUD – but a lot of people thought that already!

Vivian MacRae
West Bromwich

Right bias

I have recently been experimenting with the use of printer control codes from within BASIC (on the 9512). The manual indicates that it is a simple matter to set left and right margins using statements within programs such as:

200 LPRINT CHR$(27);"9"

or

300 LPRINT CHR$(27); "0"

Line 200 should set the left margin to the current position of the print head, whilst line 300 does same for the right margin. I say "should" because, as I discovered after much head scratching, setting the left margin only seems to be possible if the right margin has been set *first*.

R J Slipper
Weston-Super-Mare

Purr purr

I was greatly saddened by Ms. Greed's letter (October). My cat's priorities are

a) to sit on the pad if a manual draft is in progress; (sorry, Mr Sugar, Sir – I'll go and wash my printer-head out with soap!!)

b) To walk on the keyboard (if he can get the machine to himself);

c) as a last resort, to lie on the desk beside the keyboard.

I am too old to be troubled by this unbridgeable gap between the sexes, but the outlook for young people is grim indeed!

Incidentally, the only game I've ever played with my PCW was 'Hurling the Amstrad' after trying to follow the official manual. Even so, we (my cat and me!) would not be without the PCW.

H Leslie Griffiths
Ashtead

Gift of life

If you can pull yourself together enough to throw me a few crumbs of advice I shall be a lifetime subscriber to your magazine! Here goes

1. I have the PCW 8512. The manual says I need CF2-DD discs for use in Drive B, yet I have not seen any ads offering these – just the CF2's. Er, where do I get the DD's or doesn't anybody actually use the things?
2. The 'Public Domain' offers are seductive and sound too good to be true. Can I really have a whole program for something like £4 or £5? Hasn't there got to be a catch somewhere?
3. I rather fancy playing about with graphics. As an absolute beginner would I find the graphics programs too advanced to understand?

Victoria Marsden
Bradford

***8000* PLUS** *CF-2 and CF-2 DD discs are identical. Just buy any old discs and format them in the B drive as 720k; your PCW won't know the difference. Public Domain programs have a reputation for being written by computer enthusiasts, and therefore badly converted for the PCW, ill-documented and difficult to use. There are exceptions, of course (see Mr Hartland's letter) but you can't expect every program you get for free to be as good as a commercial counterpart. As for graphics, they're probably the easiest programs to learn to use (after games). They are usually much more fun too!*

Please send your £897.50 cheque for the next fifty years' subscription to The Old Barn, Somerton, Somerset, TA11 7PY.

Helpful sort

As a relatively new PCW 9512 owner I have only seen some recent issues of your magazine. However in issue 20 Mrs Francis wrote to you requesting information on a good index program for her PCW 9512, and you recommended two which you had mentioned in issues 12 and 16.

I have been unable to order these issues as there are no stocks available – can you advise me where I might be able to obtain the same or could you repeat the programs in a future issue? Any suggestions on this would be most welcome.

Mrs S A Macleod
London

***8000* PLUS** *You only have to ask. Type in this BASIC listing (see 'Listings' for how to type a listing in if you're not sure). It sorts a list of items – say an unsorted lot of page references – into alphabetical order for you. If you prepare the list in LocoScript, save it as ASCII 'simple text', keep one item to a line, don't put in bold/italic/Cyrillic letters etc. (In disc manager, press [f1] in Loco 2, [f7] Loco 1).*

When you run it insert the disc with the file to be sorted and give a different name to store the sorted file under. Back in LocoScript insert it into a Loco document with 'Insert text' ([f1] Loco 2, [f7] Loco 1).

```
10 DIM line$(1000)
20 INPUT "File to be
sorted"; infile$
30 INPUT "File to put sorted
result into"; outfile$
40 OPEN "I",1,infile$ : OPEN
"O",2,outfile$
50 WHILE NOT EOF (1)
60 maxline=maxline+1 : LINE
INPUT #1,line$(maxline)
70 WEND
80 FOR i=2 TO maxline
90 PRINT CHR$(13); "Line";
i; "/"; maxline;
100 FOR j=i TO 1 STEP -1
110 IF (UPPER$(line$(j)) >=
UPPER$(line$(j-1)) THEN 140
120 SWAP line$(j),line$(j-1)
130 NEXT j
140 NEXT i
150 FOR i=1 TO maxline
160 PRINT #2,line$(i)
170 NEXT
180 CLOSE
```

Read and eat

A specially devised message for the end of the year issue. Print out this listing and paste it onto a card for all your friends. This message goes for 8000 Plus staff as well.

```
10   REM **communication**
20   X = 9: Y = 5
30   PRINT CHR$(27)+CHR$(69)
+CHR$(27)+CHR$(72)
40   READ R$
50   PRINT CHR$(27)+"X"
+CHR$(44)+CHR$(72)+CHR$(46)+
CHR$(76)
60   GOSUB 120
70   PRINT "R"+"Y*X";
80   Y$=LEFT$(X$,1):PRINT
Y$;
90   IF X-Y<>2^2 THEN 100
ELSE PRINT CHR$(65);CHR$(83)
100  PRINT CHR$(27)+"X"
+CHR$(32)+CHR$(32)+CHR$(61)+
CHR$(121)
110  END
120  X$=MID$(R$,3,3):PRINT
X$;
130  RETURN
140  DATA NUMERAL
```

Lewis Jones
London

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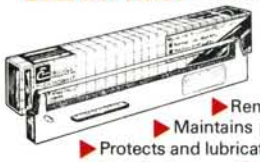

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